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ABSTRACT

This teacher's guide was designed to accompany five student workbooks: Math Language, Understanding Word Problems, Using a Calculator, Estimation, and Solving Word Problems. The series was specifically developed for low achieving students. The teaching gradually progresses in difficulty, but concepts are presented in small chunks that students can successfully handle. Questions within the text repeatedly involve the students' attention, and their learning is checked and reviewed within each lesson. Word problem situations reflect mathematical problems that students would actually do. Following suggestions for how to present and use the workbooks, the guide contains over 200 blackline master worksheets. A description at the bottom of each page states the concept being developed, and the corresponding unit and page in the student's workbook. Separate introductions are provided for each of the five workbooks, with teaching comments on each lesson. Answer keys are also included. (MNS)

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Math in Action: Word Problems

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Understanding Word Problems
Using a Calculator
Estimation
Solving Word Problems
Teacher's Guide & Resource

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Math in Action: Word Problems

Teacher's Guide & Resource

Teacher's Guides and duplicating WorkMasters™ for

- **MATH LANGUAGE**
- **UNDERSTANDING WORD PROBLEMS**
- **USING A CALCULATOR**
- **ESTIMATION**
- **SOLVING WORD PROBLEMS**

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Math in Action: Word Problems

Series Teacher's Guide

by Dr. Katherine D. Perez

OVERVIEW

Do you remember struggling with story problems when you were a child? Imagine the frustration of the special-needs students who have difficulty reading and understanding word problems. To those students, even the name itself—word *problem*—has an aura of tension and stress about it. We developed the Janus ***Math in Action: Word Problems*** series specifically for the special-needs student who has failed to grasp the basic skills needed to successfully solve word problems.

Math in Action: Word Problems is a series of five workbooks and a teacher's guide with reinforcing duplicatable WorkMasters. Students learn to think through and solve word problems by using logic and common sense. Students also come to realize that the contents of word problems are much like the contents of math problems in real life. By learning to solve word problems, students get ready to solve similar real-life problems.

Scope and Sequence of the Series

The five workbooks are written to help your students progressively acquire the necessary skills to successfully solve word problems. The scope and sequence of the workbooks are as follows:

Book One: *Math Language*

Students learn to recognize and use a basic vocabulary of math words, symbols, and abbreviations. Words taught in this book are commonly used in word problems and real life.

Book Two: *Understanding Word Problems*

This book stresses word usage and comprehension in word problems. Students learn to recognize common parts of word problems and to understand their functions.

Book Three: *Using a Calculator*

Calculators can be an aid to computation for your students, thus freeing them to focus on the conceptual aspects of solving word problems. This workbook teaches students the basic uses of a hand-held calculator.

Book Four: *Estimation*

Students learn how to estimate as an aid to solving word problems.

Book Five: *Solving Word Problems*

This workbook focuses on strategies for solving one-step and many-step word problems. Students use skills learned in the four previous *Math in Action* workbooks.

Math in Action: Word Problems can easily fit into your curriculum. The workbooks can be used in the suggested sequence above or in any order or combination that best fits your needs. Students can work individually or as partners on a workbook. All the materials—workbook lessons and WorkMasters—can be easily modified to meet specific needs in all your classes.

Developed for the Special-Needs Student

The *Math in Action: Word Problems* series was specifically developed for your low-achieving students. The materials lend themselves to remediation and review, as well as to the primary teaching of word problems.

Teaching is carefully sequenced, both within a workbook and its WorkMasters and from one workbook to the next. While the teaching gradually progresses in difficulty, concepts are always presented in small chunks that students can successfully handle. Questions within the text repeatedly involve the students' attention, and their learning is constantly checked and reviewed within each lesson.

Lessons and activities are clearly and simply written. Word-problem situations reflect real-life math problems that students would actually do. Many activities enlist the students' use of math realia, such as store ads, bank statements, sales receipts, and tax forms.

The series allows your special-needs students to work at their own pace, concentrating on skills they are weakest in. With your help, *Math in Action: Word Problems* helps your students successfully solve word problems in class, as well as in real life.

OBJECTIVES OF THE SERIES

The Janus *Math in Action: Word Problems* series can help students fulfill math requirements for graduation. The purposes of the series are to help the student:

- gain an understanding that word problems reflect math problems he would do in real life;
- learn strategies to understand and solve word problems;
- recognize, understand, and apply common math words, symbols, and abbreviations;
- apply his learning to everyday situations.

Upon completion of the five books, a student should be able to accomplish these specific learning objectives:

- recognize, understand, and use a range of common math symbols and abbreviations;
- recognize, understand, and use a range of common math terms that describe math operations, number relationships, measurements, estimation, and calculator use;
- solve a word problem by knowing how to:
  1. identify facts;
  2. identify the math question;
  3. separate relevant from irrelevant facts;
  4. extract relevant facts from a visual;
  5. use facts to write a math problem;
  6. use facts to develop a simple word problem;
  7. recognize when more than one math step is required;
  8. choose the correct math operation and solve the problem;
- perform basic math operations on a hand-held calculator by knowing how to:
  1. operate and care for a calculator;
  2. enter whole numbers, mixed numbers, and decimals;
  3. use the operation keys;
  4. read the display;
  5. use the percent key and the memory keys (M+, MR, MC);
  6. round lengthy decimals to the nearest hundredth;
- count by twos, fives, and tens;
- round to the nearest even numbers, fives, and tens;
- estimate by using:
  1. nearest even numbers, fives, and tens;
  2. easy fractions, decimals, and percents;
- apply logical thinking skills, estimation, and calculator skills to solving math problems in real-life situations.

READABILITY

Average readability for the *Math in Action: Word Problems* series is below 2.5, according to the revised Spache Readability Formula. Most hard or unfamiliar words are those that students would encounter in their real-life math experiences.

A basic math vocabulary is used throughout the series. That vocabulary is taught in *Math Language* and is listed alphabetically in a glossary at the end of the workbook.

HOW TO USE THE WORKBOOKS

Workbook Format

The workbooks are formatted so that students can easily recognize what to do on every page. Each workbook has five or six units. All units open with a brief discussion of the main concept. Except for *Math Language*, all units end with a comprehensive lesson, which has students apply what they have learned in that unit.

Lessons in all workbooks are taught in one or two pages. Many lessons include an answer key and an extra-credit activity called "Bonus." Each lesson is supported by at least one WorkMaster that reinforces its teaching. Many lessons also have WorkMasters that expand or review the teaching.

WorkMaster Format

The WorkMasters are reproducible activity sheets that meet the different skills and levels of your students. Some WorkMasters are also designed so that you can fill in varying directions as needed, depending on the concept you want to emphasize.

Each workbook has a corresponding set of WorkMasters grouped by unit. The first WorkMaster of a unit is both a pre- and post-test; the last WorkMaster is a unit review. Most WorkMasters include an extra-credit activity called "Bonus."

A line at the bottom of each WorkMaster identifies the concepts being reinforced, reviewed, or expanded, and the corresponding workbook, unit, and page.

Introducing Word Problems

Get your students ready for word problems. Before you begin the actual teaching, lead a discussion about word problems. Tell students that word problems are actually about real-life math problems. Give students examples and encourage them to volunteer their own

math experiences. Then list those experiences on the chalkboard. (You or the student might copy the list so that you can post it on a bulletin board.)

You might then assign students to bring in math realia (such as store ads and sales receipts) for extra credit.

Introducing the Series

Focus your students on the kinds of skills they will need to solve word problems. Here's one way: Show a short five- or ten-minute film, but don't show the ending. Ask students how they think the film ends and have them support their conclusions. Then point out the kinds of skills the students used to get their answers. Help them conclude that many of those problem-solving skills are the same ones they'd use to solve word problems.

Distribute the first workbook. Give students time to look through it on their own. Then introduce the book. (Refer to the separate sections in this guide for suggestions on introducing each workbook.)

Teaching Suggestions

We believe that teaching techniques used in special education programs can also benefit the regular classroom teacher. You can expand and modify many of those techniques to meet the specific needs of your students.

Identifying the Student

When special-needs students come to your class for the first time, they carry with them a history of failure and frustration. They have a low self-image and often act out in class. Academically, they are usually below grade level in all areas.

Many of your students may have problems focusing. Some may not be able to abstract. Some may be unable to work with more than one idea at a time.

For many special-needs students, a highly structured classroom and syllabus can help them learn. Balance that structure with constant encouragement and positive reinforcement. Reward students' achievements, no matter how small. Set realistic, short-term goals for them and modify your goals as students progress.

Your special-needs students learn in different ways. Some learn best by visual example; some learn by listening; and others learn kinesthetically. Find out what your students' learning modes are, then maximize their success by developing multimodal, customized activities and lesson plans.

Before You Begin Teaching

Become familiar with the workbooks and WorkMasters before using them. This will allow you to assign appropriate lessons to your special-needs students. You will also be able to prepare in advance necessary drills or additional exercises and activities for reviewing and reinforcing concepts. (Suggestions for additional materials are offered in the "Teaching the Units" section of the guide for each workbook.)

We suggest that you make answer keys so that students' work can be checked easily and immediately. Run off extra WorkMasters and fill in the answers. Then laminate the pages. You might also want to buy an extra copy of each workbook, fill in the answers, then separate and laminate the pages. You might consider storing the answer keys in a central spot so that students can self-check their work.

Building Up Skills

Special-needs students need continual repetition and review to master new skills. You might start their session with a short oral or verbal drill. Give drills that focus on the computational skills to be emphasized in the day's lesson. Or, give individual drills that focus each student on a specific skill.

Pace your students. In other words, spoonfeed their learning, increasing the amounts gradually. Follow difficult lessons with easier ones. Vary the teaching formats: for example, break up paper-and-pencil work with games and hands-on activities.

Many lessons model a question-answer pattern to help students understand the logic of word problems. Encourage students to use those models whenever they encounter word problems in other textbooks or in real life. As an extra-credit activity, you might have students modify the model, writing the questions in their own words.

When you introduce a new lesson, incorporate students' past learning and give examples of real-life situations in which they'd use the new learning. Remediate or expand each lesson as needed.

Make sure your students master a concept before moving them on to the next one. Reinforce their learning with appropriate WorkMasters or other materials of your own.

Help your students start on new exercises or activities. Walk through the first problem with them, making sure they understand what to do before working on their own. As they work, circulate around the room, giving students individual feedback. Verify that each student is doing the assignment correctly before he finishes it.

Have students show their computation on paper. That way they can correct any mistakes. Help each student analyze his mistakes *out loud*. Have him explain how he then corrected a mistake to get a right answer.

If students work together on a lesson, remember that they have different skill levels. Direct students who finish early to do the "Bonus" or work on an enrichment activity. (Some are suggested in "Teaching the Units" for each workbook.) Slower students can start the page in class and complete it as homework.

Take the last few minutes of the class period to review the day's lesson. Encourage students to discuss the lesson or activity they are working on. Clear up any confusion they may have. Assign homework that reinforces the lesson. (We suggest you assign homework every day.)

Make your life easier tomorrow. Let the last word of the class period be in praise of their hard work and a job well done.

Motivate!

Here are several suggestions for motivating your special-needs students:

- *Vary formats.* Vary your teaching techniques: organize the class period for both individual and group work; assign hands-on activities as well as traditional seat work during class time.
- *Supply feedback.* Give your students an ongoing evaluation. Tell them how they are doing: which skills have improved, which ones need more work. Always try to phrase your evaluation in positive terms.

  Many low-functioning students need concrete tokens of the progress they've achieved. You might reward them for finishing a workbook, a unit, and even a lesson or an activity (especially a hard one). (A reproducible Record of Achievement and Award of Excellence are included in this guide on pages T7 and T8.)
- *Real-life application.* Build activities around real-life math problems. Have students work with math materials (such as store catalogs, ads, and bank forms) as often as possible.
- *Post student work.* Set aside a bulletin board or part of a wall just for student work. Make sure you change the board frequently.
- *Chart progress.* Students can experience success by tracking their own progress. Provide charts and have them chart their lessons or certain activities such as timed drills.
- *Keep work folders.* Have students save their completed work in individual folders. You might store the folders in a central location in the classroom.
- *Provide an investment.* Students can invest in their own learning. Ask them to assess their progress, deciding which of their skills have improved, which need more work. You might also have them choose their own reinforcement activities and extra-credit exercises.

Instructional Aids

Create a math center in your classroom for housing reference materials such as:

- a laminated glossary and a table of abbreviations and symbols from *Math Language*;
- math textbooks;
- math realia;
- games and puzzles;
- hands-on manipulatives;
- copies of WorkMasters and answer keys;
- students' work folders.

Use manipulatives to help your students learn. Some suggestions are:

- multiplication tables and times lines;
- calculators;
- tape recorders;
- pretend dollars and coins;
- menus, bank forms, store and sale ads, catalogs, order forms, tax forms, bills, store receipts, and any real-life math realia;
- games and puzzles.

Name: _____

Period: _____

Record of Achievement

Book: ☐ Math Language ☐ Estimation

☐ Understanding Word Problems ☐ Solving Word Problems

☐ Using a Calculator

Unit	Lesson Title	Page	Skill Learned	Mark	Date

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☆ AWARD OF EXCELLENCE ☆

presented to

_____

Congratulations!

You have successfully accomplished one or more of these important goals:

☐ Learned this skill:

_____

_____

☐ Finished this task:

_____

_____

☐ Taught this skill to another person:

_____

_____

Signed: _____

_____

Date: _____

T8

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MATH LANGUAGE

Workbook by: Susan D. Echaore / Winifred Ho Roderman

WorkMasters™ by: Susan D. Echaore / Suzanne Altholz Nelson / Winifred Ho Roderman

Teacher's Guide by: Katherine D. Perez, Ed.D.
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Department of Educational Psychology, California State University, Hayward, California

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It's About Time *(p. 9)* M15
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Unit 2: Words That Compare Numbers **M17–M25**
Unit pre-post test M17
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MATH LANGUAGE Teacher's Guide

by Dr. Katherine D. Perez

OVERVIEW

Math Language, the first workbook in the Janus ***Math in Action: Word Problems*** series, teaches a vocabulary of words, symbols, and abbreviations that commonly appear in word problems.

Language-arts techniques are used to help students learn the vocabulary. Words, symbols, and abbreviations are grouped by units and lessons according to the concept they define. For example, math words that compare numbers are taught in one unit; math words that tell how big a number should be are taught in one lesson.

The workbook lessons focus students on word recognition and meaning. Math words for each lesson appear in color boxes and are broken into syllables to aid pronunciation. The accompanying WorkMasters reinforce the learning with exercises in this sequence: recognition, comprehension, and application.

At the end of *Math Language* are two reference guides: a table of symbols and abbreviations and an alphabetical glossary of all math words taught in the workbook.

OBJECTIVES OF THIS WORKBOOK

Upon completion of this workbook and corresponding WorkMasters, the student will be able to:

- recognize, understand, and use common math words in real-life situations;
- recognize, understand, and use common math words in word problems;
- identify and use common math symbols;
- recognize, understand, and use common math abbreviations;
- apply his learning to everyday situations.

TEACHING SUGGESTIONS

Introducing the Workbook

Here's one way you might get your students ready for *Math Language:* Set up part of your classroom for a math-word scavenger hunt. Put out math realia from stores, banks, newspapers, etc. Then, group your students in teams or pairs, give each group at least five math words, and tell them to find those words on the math realia. Set a time limit. When the time is up, discuss what they found. Help them define the words as they are used in the ad, brochure, form, etc. Have them explain why it's important to understand math words, leading them to conclude that understanding math language can help them solve word problems.

Now, distribute *Math Language.* Give students time to leaf through the pages, then read the introduction aloud.

Prepare Your Students

Get your students ready to tackle each new group of math words. Review the concept that the words define. Make sure the students understand the concept before they begin the lesson.

You might present a group of new words by telling the class a word problem that incorporates those words. Tell students to raise their hands when they hear a word they don't understand. Write the words on the chalkboard. Then define the words for them and add any missing new words. Help students figure out what the words have in common.

Reinforcing Vocabulary

Special-needs students need continual repetition and reinforcement. You might develop different types of vocabulary exercises to help your students learn the math words. Talk with their English teachers for some ideas. Some suggestions are:

- spelling and word-meaning bees;
- cloze exercises (as your students become more skilled, encourage them to write their own);
- charades.

Good Habits

Get students into the habit of defining math terms in their own words and looking up unfamiliar terms right away.

You might also encourage them to keep their own glossary of new math words, symbols, and abbreviations they encounter.

TEACHING THE UNITS

This section contains brief descriptions of each workbook page and suggested enrichment activities. Corresponding WorkMasters are listed in parentheses after each page description.

Unit 1: Words About Numbers

Students learn math words that describe what to do with numbers and how many numbers to use. (Unit pre-post test, M7; unit review, M16)

PAGE 4: **Operation Words**
Math Words: *add, divide, multiply, subtract*
Students review words that describe the four math operations. (M8)

PAGE 5: **What Kind of Answer?**
Math Words: *difference, product, quotient, sum*
Students review the words that describe the answer to each math operation. (M8, M9)

PAGES 6–7: **How Much? How Many?**
Math Words: *altogether, amount, in all, remain, total*
Students study math words that are often used in the math question. They conclude that knowing the meanings of those words can help them choose the correct math operation. (M10, M11, M12)

PAGE 8: **One of Something**
Math Words: *at, each, for, per*
Students learn math words that describe an amount as *one* unit of something. (M13, M14)

PAGE 9: **Every Time**
Math Words: *daily, hourly, monthly, weekly, yearly*
Students study math words that describe amounts of time. (M15)

Enrichment Activities
- Have students clip sale ads from newspapers. Ask them to describe the items and prices, using math words they've learned.
- Hand out sale ads from various grocery stores. Teach students the concept of *cost per unit*. Then, assign students different items and have them comparison shop.
- Have students make flashcards of the math words as they learn them.

Unit 2: Words That Compare Numbers

Students learn math words that tell when numbers are smaller or larger, the same or different. (Unit pre-post test, M17; unit review, M25)

PAGES 10–11: **How Big?**
Math Words: *fewer than, greater than, less than, more than*
Students study math words that describe when one number is smaller or larger than another. (M18, M19, M20, M21)

PAGES 12–13: **How Much?**
Math Words: *equally, evenly, least, most*
Students study math words that describe when numbers are the same or different. (M22, M23, M24)

Enrichment Activities
- Have students choose a sports team and find out its ratings for the last five years. Have students report their findings, using math words they've learned.
- Have students survey the class on questions such as how many siblings each student has or how many movies they've seen over a certain time. Then discuss the survey, using math words they've learned.

Unit 3: Changing Numbers

Students learn math words that describe how numbers change. (Unit pre-post test, M26; unit review, M32)

PAGES 14–15: **Larger or Smaller?**
Math Words: *decrease, decreased, increase, increased, raise, raised, reduce, reduced*
Students study math words that tell when a number becomes larger or smaller. (M27, M28, M29)

PAGES 16–17: **Three Little Words**
Math Words: *by, from, to*
Students learn how *by, from,* and *to* can change the meaning of a sentence. (M30, M31)

Enrichment Activities
- Have students find newspaper sale ads that use math words from this unit. Have them highlight the words. Then ask them to explain to the class what their ads mean.
- Have individual students tell the class about a personal math experience. Encourage them to use math words in their stories.

Unit 4: Words About Money

Students learn math words about money in real-life uses, such as paychecks and bank accounts. (Unit pre-post test, M33; unit review, M42)

PAGES 18–19: **What's the Word?**
Math Words: *charge, credit, deduct, deposit, withdraw*
Students study math words about adding and subtracting money. (M34, M35, M36, M37, M38)

PAGES 20–21: **What's the Word?**
Math Words: *balance, change, discount, interest, percent*
Students study math words about money in spending and buying situations. (M39, M40, M41)

Enrichment Activities
- Bring in general merchandise catalogs and let each student play-order $300 worth of items. Have students compare how they will pay for the items.
- Bring in bank deposit and withdrawal slips. Let students practice filling them out.

Unit 5: Words That Measure

Students learn math words that describe standard and metric units of measure. (Unit pre-post test, M43, M49, M50)

PAGE 22: **Words About Food**
Math Words: *cup, tablespoon, teaspoon*
Students review math words that often describe food volumes. You might reinforce this lesson by bringing in actual measuring spoons and cups. (M44)

PAGE 23: **Words About Liquids**
Math Words: *gallon, pint, quart*
Students review math words that describe liquid vol-

umes. Reinforce this lesson with actual gallon, pint, and quart containers. (M45)

PAGE 24: **Words About Weight**
Math Words: *ounce, pound, ton*
Students study math words that describe units of weight. Bring in containers for different amounts of ounces and pounds. (M46)

PAGE 25: **Words About Length**
Math Words: *foot/feet, inch, mile, yard*
Students study math words that describe units of length. Show students measuring tools, such as yardsticks and tape measures. (M47)

PAGE 26: **Metric Words**
Math Words: *centimeter, gram, kilogram, kilometer, liter, meter, milliliter*
Students study math words that describe metric units of volume, weight, and length. Bring in a metric ruler and a measuring cup with metric gradations. (M48)

Enrichment Activities
- Make a class cookbook. Have students bring in recipes for their favorite foods.
- Hold a class track-and-field meet. (Students might do the 100-yard dash, a baseball throw, and the broad jump.) Keep a score chart and post it in your classroom after the meet.
- Bring in a book of Olympic records. Have students make a bulletin board of world records in various events, using math words they've learned in this unit.

Unit 6: Abbreviations and Symbols

Students learn abbreviations and symbols for common math words. (Unit pre-post test, M51)

PAGE 27: **Short Words**
Math Words: *amt., bal., dep., ea., int., tot.*
Students study abbreviations for some math words they've learned. (M52, M53)

PAGE 28: **Short Measures**
Math Words: *c., cm., ft., g., gal., in., kg., km., l., lb., m., mi., ml., oz., pt., qt., tb., tsp., yd.*
Students study abbreviations for some standard and metric units of measure. (M52, M53)

PAGE 29: **Symbols**
Students review symbols for many common math words. (M52, M53)

PAGE 30: **Tables**
Students can refer to this list to find math symbols and abbreviations quickly. (M52, M53)

Enrichment Activities
- Give students recipes with spelled-out ingredients. Have them rewrite the recipes, using abbreviations.
- Have students find math symbols in newspaper sale ads. Have them clip the ads, color the symbols, and put the ads together in a class collage.

MATH LANGUAGE
Workbook Answer Key

Unit 1: Words About Numbers

Page 4 **Operation Words** 1. b 2. d 3. a 4. c
Other Words Accept all reasonable answers, such as: 1. added to 2. take away 3. times 4. goes into
Page 5 **The Right Name** 1. product 2. sum 3. difference 4. quotient **Bonus** 1. 192 2. 32 3. 16 4. 3
Page 6 **Use the Words** 1. amount 2. total 3. in all *or* altogether 4. altogether *or* in all 5. remain
Page 7 **Which Operation?** 1.a. bigger b. add 2.a. bigger b. add 3.a. smaller b. subtract 4.a. bigger b. multiply 5.a. bigger b. add **Bonus** 1. 13 2. $4.00 3. 17 4. 30 5. $65
Page 8 **What's the Answer?** 1. a 2. b 3. b 4. b

Unit 2: Words That Compare Numbers

Page 10 **What's the Number?** 1. greater than; 47 (or less) 2. fewer than; 11 (or more) 3. more than; 199 (or less) 4. less than; 7 (or more)
Page 11 **More or Less?** 1. *less than* a. Joe b. Pete 2. *more than* a. Charles b. Martha 3. *fewer* a. Tom b. Mark 4. *greater than* a. Mara b. Yoko **Add or Subtract?** 1. subtract 2. add 3. subtract 4. add **Bonus** 1. $4 2. 4 3. 37 4. $250
Page 12 **Who Gets What?** 1. *most, least* a. least b. most 2. *evenly* same 3. *equally* same
Page 13 **What's the Answer?** 1. b 2. c 3. b 4. c (Accept all reasons that show understanding of the math words.)

Unit 3: Changing Numbers

Page 14 **What's the Answer?** 1.a. decrease b. reduce 2.a. increase b. raise
Page 15 **Mathword Puzzler** *Across* 2. decreased 3. reduced 4. increased 6. raised 7. increase *Down* 1. reduce 2. decrease 5. raise **What's Wrong?** 1. increased *or* raised 2. reduced *or* decreased 3. decreased *or* reduced 4. raised *or* increased **Use the Word** Accept all sensible number pairs.
Page 16 **Which Word?** 1. From 2. To 3. By **What's the Answer?** 1. $8 2. $10 3. $2
Page 17 **Use the Words** 1. a. reduced from b. reduced by c. reduced to 2. a. 40 b. 50 c. 10 3. (Sentences may be in any order.) a. raised by $.50. b. raised from $4.00. c. raised to $4.50.

Unit 4: Words About Money

Page 19 **Add or Subtract?** 1.a. charge b. credit c. deposit 2.a. deduct b. withdraw **What's Happening?** 1. *deducts* subtracts 2. *credits* adds 3. *charges* adds 4. *deposits* adds 5. *withdraws* subtracts

Page 20 What's the Meaning? 1. *change* 2. *interest* 3. *discount* 4. *percent* 5. *balance* (Accept all definitions that show understanding of the math words.)

Page 21 What's the Question? 1. *interest* 2. *change* 3. *discount* 4. *balance* 5. *percent* (Accept all sensible questions.) **Bonus** 1. $60 2. $1.50 3. $16 4. $3,250 5. 15%

Unit 5: Words That Measure

Page 22 Which Is Bigger? 1. cup 2. cup 3. tablespoon **Measure Up** 1.a. teaspoon b. tablespoon c. cup 2.a. teaspoons b. cup

Page 23 Which Is Bigger? 1. gallon 2. quart 3. gallon **Measure Up** 1.a. pint b. quart c. gallon 2.a. pints b. gallon

Page 24 Which Is Bigger? 1. pound 2. ton 3. ton **Measure Up** 1.a. ounce b. pound c. ton 2.a. ounces b. ton

Page 25 Bigger or Smaller? 1. smaller 2. smaller 3. smaller 4. bigger 5. smaller 6. bigger **Measure Up** 1.a. inch b. foot c. yard d. mile 2.a. inches b. yard c. mile

Page 26 Metric Words 1.a. gram b. kilogram c. kilogram; grams 2.a. milliliter b. liter c. milliliters; liter 3.a. centimeter b. meter c. kilometer d. centimeters; meter; kilometer

Unit 6: Abbreviations and Symbols

Page 27 Your Turn 1. int. 2. tot. 3. ea. 4. amt. 5. bal. 6. dep.

Page 28 Your Turn 1. tsp. 2. tb. 3. c. 4. pt. 5. qt. 6. gal. 7. oz. 8. lb. 9. in. 10. ft. 11. yd. 12. mi. **Your Turn** 1. g. 2. km. 3. ml. 4. l. 5. cm. 6. m. 7. km.

Page 29 Measurement 1. 12″ 2. 6′ 3. 5# **Money** 1. 60¢ 2. $1 *or* $1.00 3. 1.5 4. 50% **Operations** 1. 2 + 3 2. 4 − 2 3. 8 × 6 4. 6 ÷ 2 or $2\overline{)6}$ 5. 2 + 2 = 4 **Other Math Words** 1. 6>3 2. 3<6 3. @ $2.00 4. 60¢/gal. 5. #1

MATH LANGUAGE WorkMasters Answer Key

Unit 1: Words About Numbers

M7 Unit 1: Words About Numbers **A.** 1. − 2. × 3. − 4. + 5. ÷ 6. ÷ 7. + 8. × **B.** 1. b 2. c 3. e 4. a 5. d **C.** 1. per 2. for 3. at 4. Each **D.** 1. daily 2. hourly 3. monthly 4. weekly 5. yearly

M8 Operation Words/Math Operations 1. add 2. subtract 3. multiply 4. divide **Math Answers** 1. difference 2. sum 3. quotient 4. product **Wrong Word** 1. add *or* quotient 2. sum *or* multiply 3. product *or* subtract 4. difference *or* divide

M9 Operation Answers/Math Match 1. d 2. a 3. b 4. c **What's the Answer?** 1. product 2. difference 3. sum 4. quotient 5. difference 6. difference 7. quotient 8. sum **Bonus** 1. 8 2. 2 3. 28 4. 6 5. 15 6. 11 7. 12 8. 34

M10 Five Key Words/Scrambled Words 1. amount 2. in all 3. altogether 4. total 5. remain **Math Puzzler** Accept all clues that show understanding of the math words. *Across* 4. total 5. remain *Down* 1. altogether 2. amount 3. in all

M11 Which Operation? 1. *in all* 2. *altogether* 3. *remain* 4. *amount* 5. *total* **Bonus** 1. 13 2. 132 3. 3 4. $3 5. $52.50

M12 Math Question Accept all sensible answers that include a math word.

M13 What's the Amount? 1. *per* 1 gallon 2. *each* 1 record 3. *for* 2 bottles 4. *at* 1 hour **Bonus** 1. 4 2. $18 3. $2.50 4. $195.75

M14 Ad Math Words 1. $24.98 2. 80¢ 3. $18.25 4. $1.50 **Bonus** 1. $49.96 2. $4.00 3. $36.50 4. $4.50

M15 It's About Time Accept all sensible questions that show understanding of the math words. **Bonus** 1. $22 2. $4 3. 44 4. $3,000 5. 2

M16 Unit 1: Math Word Check *Across* 1. add 3. subtract 5. at 7. altogether 9. in all 12. difference 14. quotient 16. multiply 18. weekly 20. product 21. hourly *Down* 2. daily 4. total 6. divide 7. amount 8. remain 10. monthly 11. yearly 13. for 15. sum 17. per 19. each

Unit 2: Words That Compare Numbers

M17 Unit 2: Words That Compare Numbers **A.** 1. smaller 2. larger 3. smaller 4. larger **B.** 1. c 2. b 3. a 4. b **C.** 1. $10 2. 59 (or less) 3. 61 (or more) 4.a. 8 b. 3 5. Answers will vary. 6. Answers will vary. 7. 5 *or* 2

M18 Comparing Numbers What's the Word? 1. less than 2. greater than 3. more than 4. fewer than **Use the Word** 1.a. more than b. fewer than c. greater than d. less than

M19 Larger Numbers, Smaller Numbers 1. *less than* $750 2. *greater than* 10 percent 3. *fewer than* 10 4. *more than* 28 **Bonus** 1. $750; $550 2. 10; 12 3. 10; 7 4. 28; 36

M20 More or Less?/What's the Question? 1. *greater than* less than 2. *more than* lower than 3. *fewer than* more than 4. *less than* higher than **Bonus** 1. $215 2. $1.14 3. 144 4. $4.50 **What's the Fact?** 1. $24 (or less) 2. 41 hours (or more) **Bonus** Students complete problems using figures they supplied.

M21 Clues to Add or Subtract 1. *less than* 2. *more than* 3. *greater than* 4. *fewer than* **Bonus** 1. 17 2. 350 3. $266 4. 6

M22 Words That Show How Much/Word Search 1. equally 2. least 3. most 4. evenly **It's Your Turn** 1. *most* 280 2. *evenly* 6 3. *least* 12 4. *equally* 2

M23 Shopping Through the Ads/Shoe Sale 1. least 2. most 3. equally 4. evenly **Bonus** $16.08 more than Rike shoes; $8.48 more than Ronner and Jan shoes **Bike Sale** 1. Ports 2. Twin and Spido 3. Twin and Spido 4. the same amount

M24 Most, Least, or the Same 1. *evenly* 2

2. *equally* 4 **3.** *least* 5 **4.** *most* 1,500 **Bonus** **1.** 12 **2.** $5 **3.** $20 **4.** 3,100

M25 Unit 2: Math Word Check *Across* **2.** fewer than **4.** most **6.** more than **7.** less than **8.** evenly *Down* **1.** greater than **3.** equally **5.** least

Unit 3: Changing Numbers

M26 Unit 3: Changing Numbers **A. 1.** more **2.** larger **3.** smaller **4.** less **B. 1.a.** $75 **b.** $90 **c.** $15 **2.a.** 10 **b.** 40 **c.** 30 **C.** Wording and sentence order will vary.

M27 Words That Show How Numbers Change/ Word Search **1.** increase **2.** reduce **3.** decrease **4.** raise **It's Your Turn** Accept all sensible student work. **Bonus** **1.** 8 **2.** $7 **3.** 17 **4.** $305

M28 Changing to Another Number/Larger or Smaller **1.** smaller **2.** larger **3.** larger **4.** smaller **Put In the Math Word** **1.** decreased *or* was reduced **2.** was raised *or* increased **3.** increased *or* were raised **4.** was reduced *or* decreased **Bonus** **1.** $8 **2.** $.20 **3.** 2 **4.** 15

M29 What Happens to the Number? **1.** *raise* more **2.** *decrease* less **3.** *reduced* less **4.** *increase* more

M30 How Do Numbers Change? Sentence order may vary. **1.** The price was raised **a.** from $5.00. **b.** by $.50. **c.** to $5.50. **2.** The rate was decreased **a.** from 11% **b.** by 1% **c.** to 10% **3.** They were reduced **a.** from 8 hours. **b.** by 2 hours. **c.** to 6 hours. **4.** His weight increased **a.** from 8 pounds. **b.** by 2 pounds. **c.** to 10 pounds.

M31 Changing From, By, and To Wording may vary. **1.** What was the price raised to? **2.** What were the hours increased from? **3.** How many minutes is Randy's time decreased by? **4.** What was the price reduced from? **Bonus** **1.** $12 **2.** 20 **3.** 20 **4.** $105

M32 Unit 3: Math Word Check/On Sale! **1.** $400 **2.** $30 **3.** $41 **4.** $89 **Changing Prices** **1.** reduces **2.** raises **Bonus** **1.** $11 **2.** $180 **3.** $101 **4.** $11

Unit 4: Words About Money

M33 Unit 4: Words About Money **A. 1.** c **2.** a **3.** e **4.** d **5.** b *Add money:* charge, credit, deposit *Subtract money:* deduct, withdraw **B. 1.** discount **2.** interest **3.** percent **4.** balance **5.** change

M34 Talking About Money/What's the Word? **1.** deposit **2.** deduct **3.** withdraw **4.** credit **5.** charge **It's Your Turn** **1.** charges **2.** credits **3.** deducts **4.** withdraws **5.** deposits **Bonus** **1.** $9.50 **2.** $47 **3.** $5 **4.** $50 **5.** $310

M35 Money Word Check/What's the Meaning? **1.** c **2.** a **3.** e **4.** b **5.** d **What's Wrong?** **1.** deposits **2.** deducts **3.** credits **4.** withdraws **5.** charges

M36 Saving and Spending **1.** withdraw **2.** charge **3.** credit **4.** deposit **5.** deduct **Bonus** **1.** $70 **2.** $14 **3.** $75 **4.** $215 **5.** $15

M37 Money Problems **1.** *withdraws* **2.** *credits* **3.** *deducts* **4.** *deposits* **5.** *charges* **Bonus** **1.** $75 **2.** $480 **3.** $482 **4.** $500 **5.** $43

M38 The Word's the Thing/Money Word Puzzler *Across* **3.** deduction **5.** credit *Down* **1.** deposit **2.** withdrawal **4.** charge **What's the Word?** **1.** *withdrawal* takes out **2.** *charge* adds **3.** *credit* adds **4.** *deduction* takes out **5.** *deposit* adds

M39 More Words About Money/Hidden Money Words **1.** discount **2.** percent **3.** balance **4.** change **5.** interest **Money Math** **1.** c **2.** a **3.** b **4.** e **5.** d

M40 Words About Buying **1.** *percent* $6.95 **2.** *discount* $4.99 **3.** *change* $5.00 **4.** *interest* $770 **5.** *balance* $300 **Bonus** **1.** $7.37 **2.** $2.00 **3.** $2.45 **4.** $875 **5.** $115

M41 Buying Problems **1.** *balance* **2.** *percent* **3.** *discount* **4.** *change* **Bonus** **1.** $150 − 75 = $75 **2.** $30 − 27 = $3 **3.** $40 − 28 = $12 **4.** $20.00 − 6.18 = $13.82

M42 Unit 4: Math Word Check **1.** discount; percent **2.** charge; interest **3.** withdraw **4.** deposit **5.** change; deducts; balance; credit

Unit 5: Words That Measure

M43 Unit 5: Words That Measure/Standard Units **1.** foot, inch, mile, yard **2.** ounce, pound, ton **3.** cup, tablespoon, teaspoon **4.** cup, gallon, pint, quart **Metric Units** **1.** liter, milliliter **2.** centimeter, kilometer, meter **3.** gram, kilogram

M44 Cooking Measures **1.** flour **2.** sugar **3.** lemon juice **4.a.** 8 **b.** 1 **c.** 9

M45 Liquid Measures **1.** red paint **2.** white paint **3.** wall plaster **4.a.** 1 **b.** 4 **c.** 4

M46 The Weight of Things **1.** 2 pound cans **2.** 1 ton **3.** 1 ton **4.a.** 1 **b.** 32 **c.** 4,000

M47 Measuring Length **1.** 1 mile **2.** 100 yards **3.** 6 feet **4.a.** 1,760 **b.** 12 **c.** 2 **d.** 3

M48 Metric Measures **1.** 2.5 kilometers **2.** 2 liters **3.** 81 kilograms **Bonus** 81 kilograms = about 180 pounds; 1.7 meters = about 6 feet; 1 centimeter = about 1/2 inch; 2.5 kilometers = about 1.5 miles

M49 Words About Measuring/Measuring Liquids pint, liter, gallon, milliliter, quart **Measuring Weight** **1.** kilogram **2.** ton **3.** pound **4.** gram **5.** ounce **Measuring Length** **1.** kilometer **2.** inch **3.** mile **4.** foot **5.** meter **6.** centimeter **7.** yard

M50 Table of Measures Cooking 3; 16 **Liquid Volume** 2; 4 **Length** 12; 3; 5,280 **Weight** 16; 2,000 **Time** 60; 24; 7; 365; 52; 12

Unit 6: Abbreviations and Symbols

M51 Unit 6: Abbreviations and Symbols **A. Short Words** **1.** amt. **2.** bal. **3.** dep. **4.** ea. **5.** int. **6.** tot. **B. Short Measures** **1.** c. **2.** tb. **3.** tsp. **4.** in. **5.** ft. **6.** yd. **7.** mi. **8.** pt. **9.** qt. **10.** gal. **11.** oz. **12.** lb. **C. Short Metrics** **1.** g. **2.** kg. **3.** ml. **4.** l. **5.** cm. **6.** m. **7.** km. **D. Symbols** **1.** + **2.** − **3.** × **4.** ÷ **5.** = **6.** @ **7.** / **8.** # **9.** < **10.** > **11.** ¢ **12.** $ **13.** % **14.** . **15.** " **16.** ' **17.** #

M52 What Does It Stand For? Answers will depend on the abbreviations and symbols assigned.

M53 More Abbreviations and Symbols Answers may vary.

Subject: _____ Name: _____

Period: _____ Date: _____

Unit 1: Words About Numbers

A. Write the math operation sign that belongs to each Math Word. (The first is done.)

–	1. subtract	_____	5. quotient
_____	2. multiply	_____	6. divide
_____	3. difference	_____	7. add
_____	4. sum	_____	8. product

B. Draw a line from each word to its definition. (The first is done.)

1. **altogether**	a. To be left.
2. **amount**	b. All the amounts put together.
3. **in all**	c. The number of something.
4. **remain**	d. The whole amount.
5. **total**	e. For everything.

C. Finish writing these sentences. Use **at**, **each**, **for**, and **per**.

1. Milk is $1.20 _ _ _ gallon.
2. 2 gallons _ _ _ $2.40.
3. For sale _ _ $1.20 a gallon.
4. _ _ _ _ gallon is $1.20.

D. Write the word that means:

1. every day _____
2. every hour _____
3. every month _____
4. every week _____
5. every year _____

Score:

_____ no. right

_____ no. wrong

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Subject: _____ Name: _____

Period: _____ Date: _____

Operation Words

Word Search

Eight Math Words are hidden in the puzzle. Four words are the names of math operations. Four are the names of answers.

Read each line across, from left to right. Circle the Math Words. As you find each word, write it next to the puzzle. (The first is done.) Then check your answers. Look at pages 4 and 5 in your *Math Language* workbook.

D (D I F F E R E N C E) G H L
H A D D P S U B T R A C T R
S U M H M U L T I P L Y Z O
E S A R R Q U O T I E N T G
R D I V I D E P R O D U C T

Math Operations

1. _____
2. _____
3. _____
4. _____

Math Answers

1. difference
2. _____
3. _____
4. _____

Wrong Word

These sentences don't make sense. One Math Word in them is used wrong. Cross out that word. Then write the sentences with the correct Math Word.

1. When you divide, your answer is a sum.

   _____

2. You get a product when you add.

   _____

3. You get a difference when you multiply.

   _____

4. You get a quotient when you subtract.

   _____

Bonus: Can you spell those Math Words? Turn the page over. First spell the four operation words. Then spell the names of answers. Check your spelling.

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Subject: _____ Name: _____

Period: _____ Date: _____

Operation Answers

Math Match

These words are names of the four kinds of math answers. Draw a line from the names to the right operation sign.

1. sum	a. −
2. difference	b. ×
3. product	c. ÷
4. quotient	d. +

What's the Answer?

What kind of answers will these problems have? Write *sum, difference, product,* or *quotient* next to each problem.

1. $\begin{array}{r} 4 \\ \times\ 2 \\ \hline \end{array}$ product

2. $\begin{array}{r} 9 \\ -\ 7 \\ \hline \end{array}$ _____

3. $\begin{array}{r} 12 \\ +\ 16 \\ \hline \end{array}$ _____

4. $36 \div 6 = ?$ $6\overline{)36}$ _____

5. $\begin{array}{r} 32 \\ -\ 17 \\ \hline \end{array}$ _____

6. $\begin{array}{r} 15 \\ -\ 4 \\ \hline \end{array}$ _____

7. $24 \div 2 = ?$ $2\overline{)24}$ _____

8. $\begin{array}{r} 18 \\ +\ 16 \\ \hline \end{array}$ _____

Bonus: Find the answers to the problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Five Key Words

Scrambled Words

The letters in these Math Words are mixed up. Look at the clue in front of each word. Write the word correctly. Then write a sentence using the word. (The first is done.)

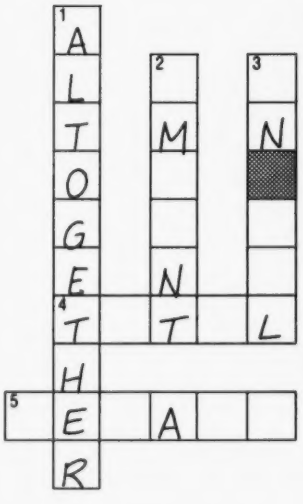
Math Words

altogether
amount
in all
remain
total

1. (a sum) **ountma** amount
   The amount of his bill is $10.00.
2. (everything) **lalin** _ _ _ _ _ _
   _____
3. (all) **getaltoher** _ _ _ _ _ _ _ _ _ _ _
   _____
4. (the whole) **atlot** _ _ _ _ _
   _____
5. (are left) **ainmer** _ _ _ _ _ _
   _____

Math Puzzler

Finish this crossword puzzle. Write clues for the puzzle.



Across

4. _____
5. _____

Down

1. _____
2. _____
3. _____

Bonus: Write sentences using the Math Words. Use the back of this paper.

M10

Recognizing key words/*MATH LANGUAGE,* Unit 1, p. 6.

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Subject: _____ Name: _____

Period: _____ Date: _____

Which Operation?

Read each word problem. Circle the Math Word in the problem. Next answer the question. (The first is done.)

1. Ray buys 8 gallons of gas on Monday.
   He buys 5 gallons on Friday.
   How many gallons does he buy (in all?)

   To do the problem, you'd add 5 gallons and 8 gallons. Why?

   The question asks about all the gas he bought.

```
   8  gallons
 + 5  gallons
 ------ gallons
```

2. Jill worked 12 hours a week. She worked for 11 weeks. How many hours did she work altogether?

   You'd multiply 11 weeks and 12 hours. Why?

   _____

```
  1 1  weeks
× 1 2  hours a week
 --------
 ------
 -------- hours
```

3. Sal builds a bookshelf. He has a 10 foot board. He cuts off 7 feet.
   How many feet of board remain?

   You'd subtract 7 feet from 10 feet. Why?

   _____

```
  1 0  feet
−  7  feet
 -------- feet
```

4. Bob and Sara's lunch check is $8.
   Bob pays $5. What amount does Sara pay?

   You'd subtract $5 from $8. Why?

   _____

```
   $8  check
−  5  Bob's meal
 ------- Sara's meal
```

5. Suppose you work 15 hours. And you earn $3.50 an hour. What are your total earnings for 1 week?

   You'd multiply 15 hours and $3.50. Why?

   _____

```
  $3.5 0  an hour
×    1 5  hours
 ------------
 ---------
 ------------ total
```

Bonus: Find the answers to the problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Math Question

Many word problems end in a question. Think of a question for each of the problems below. In each question, use one of the Math Words. Use each word just once. Cross out each word after you use it. (The first is done.)

Math Words

altogether
~~amount~~
in all
remain
total

1. George is shopping for groceries. He buys a chicken for $3.50. He also buys butter for $1.89.
   What is the amount of his bill?
2. Dave drove 325 miles on Tuesday. He drove 268 miles on Wednesday.

   _____
3. Jade buys tickets for a concert. She buys 4 tickets. Each ticket costs $13.

   _____
4. Linda has a savings account. She has $165 in it. She takes out $25 from her account.

   _____
5. Rob and Dee are returning empty bottles to a store. Rob has 30 bottles. Dee has 28 bottles.

   _____

Bonus: Write a word problem of your own. Use one of the Math Words.

_____

_____

_____

_____

_____

_____

_____

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Subject: _____ Name: _____

Period: _____ Date: _____

What's the Amount?

Math Words

at
each
for
per

Read the word problems. Circle the Math Words in them. Then finish the sentences. Write a *number* and a *word*. (The first is done.)

1. Bill's car gets 25 miles (per) gallon. He drives 100 miles. How many gallons of gas does he use?

   100 miles ÷ 25 miles per gallon (mpg) = ?

   25 is the number of miles Bill goes on *1* *gallon* of gas.

   ------ gallons
   25 | 1 0 0 miles
   mpg

2. Marcus buys 3 records. Each record costs $6. How much does Marcus pay?

   $6 price for each record
   × 3 records
   ------ for 3 records

   $6 is the price for _____ _____.

3. The supermarket has a special price on soda: 2 bottles for $1.25. How much would 4 bottles cost?

   $1.25 for 2 bottles
   + 1.25 for 2 bottles
   ------ for 4 bottles

   $1.25 is the price for _____ _____.

4. You work 45 hours at $4.35 an hour. How much money do you earn?

   $4.35 an hour
   × 45 hours

   $4.35 is your pay for _____ _____.

   ------ money you earn

Bonus: Find the answers to the problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Ad Math Words

Find these Math Words in the ad: **at, each, for,** and **per.** Draw a circle around them and the prices they describe.

Suppose you buy those things. The math problems show how you'd figure out your costs. But prices are missing in each problem. Write the prices. (The first is done.)

1. 2 pairs of seat covers

$24.98 price of 2 (1 pair)
× 2 pairs
---------- cost of 2 pairs

2. 5 quarts of Star Oil

---------- price of 1 quart
× 5 quarts
---------- price of 5 quarts

3. 4 floor mats

---------- price of 2 (a pair)
× 2 pairs
---------- cost of 4 mats

4. 3 cans of Car Wax

---------- price of 1 can
× 3 cans
---------- cost of 3 cans

Bonus: Find the answers to the problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

It's About Time

The Math Words in dark letters are about time. Write the question again, but use your own words for the Math Words. (The first is done.)

1. Steve earns $44 every 2 weeks. How much does he earn **weekly**?

   How much does he earn every week?

   $44 for 2 weeks ÷ 2 weeks = ?

   ------- weekly pay
   2 weeks ⟌ $4 4 for 2 weeks

2. Beth works 20 hours a week. She is paid $80 each week. What is her **hourly** pay?

   _____

   $80 a week ÷ 20 hours = ?

   ------- hourly pay
   20 hours ⟌ $8 0 a week

3. Jose fills his gas tank with 11 gallons every week. How many gallons does he buy **monthly**? (Let 4 weeks equal 1 month.)

   _____

   1 1 gallons
   × 4 weeks a month

   -------- gallons monthly

4. Sal pays $250 a month for rent. How much does he pay **yearly**?

   _____

   $2 5 0 a month
   × 1 2 months

   ---------- yearly rent

5. Ernie works 5 days a week. He drives 10 miles every week. How many miles does he drive **daily**?

   _____

   10 miles ÷ 5 days = ?

   ------ miles daily
   5 days ⟌ 1 0 miles a week

Bonus: 1. Do the problems.
2. Pick a Math Word that talks about time. Write a word problem with it. Use the other side of this paper.

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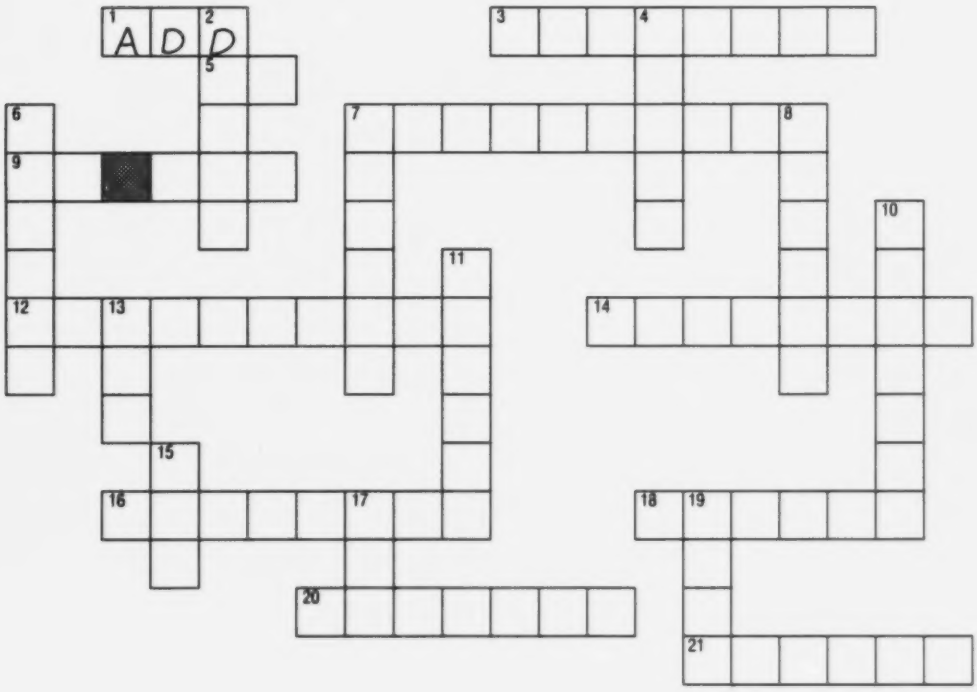
Period: _____ Date: _____

Unit 1: Math Word Check

Do the crossword puzzle. Use these Math Words from unit 1.



Math Words

add
altogether
amount
at
daily
difference
divide
each
for
hourly
in all
monthly
multiply
per
product
quotient
remain
subtract
sum
total
weekly
yearly

Across

1. +
3. −
5. 10 boxes of fruit _____ $2 a box.
7. Everything.
9. Altogether.
12. Answer you get when you subtract.
14. Answer you get when you divide.
16. ×
18. Every week.
20. Answer you get when you multiply.
21. Every hour.

Down

2. Every day.
4. The whole amount.
6. ÷
7. The number or sum of something.
8. To be left.
10. Every month.
11. Every year.
13. 2 shirts _____ $15.
15. Answer you get when you add.
17. 50 miles _____ hour.
19. 1 person or thing.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 2: Words That Compare Numbers

A. The Math Words below show whether a number is larger or smaller than another number. Finish these sentences. Write the word *larger* or *smaller*.

1. **Fewer than** shows a number is _____.
2. **Greater than** shows a number is _____.
3. **Less than** shows a number is _____.
4. **More than** shows a number is _____.

B. Draw a line from each Math Word to its meaning. Two words have the same meaning.

1. **most**	a. The smallest amount.
2. **evenly**	b. Having the same amount.
3. **least**	c. The largest amount.
4. **equally**	

C. Finish these sentences. Write a number that makes sense.

1. Al and Jean split $20 **evenly**. Each gets $_____.
2. 60 is **greater than** _____.
3. 60 is **less than** _____.
4. Joe works 8 hours, 3 hours, *or* 7 hours each day.
   a. _____ is the **most** hours he works.
   b. _____ is the **least** hours he works.
5. _____ is **more than** _____.
6. _____ persons is **fewer than** _____ persons.
7. 10 divided **equally** is _____.

Score:

_____ no. right

_____ no. wrong

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Subject: _____ Name: _____

Period: _____ Date: _____

Comparing Numbers

What's the Word?

These Math Words show which numbers are bigger or smaller in a problem. But some letters are missing. Fill in the missing letters. Then check your answers. Look at page 10 in your *Math Language* workbook.

1. l _ s s t _ _ n
2. g r _ _ _ e r _ h a _
3. m _ _ e t _ a _
4. _ e w _ _ t _ _ _

Use the Word

1. Finish these sentences. Use one of the Math Words from the exercise above. Use a word once.
   a. $24 is _ _ _ _ _ _ _ _ $16.
   b. 4 persons are _ _ _ _ _ _ _ _ 8 persons.
   c. 6 percent is _ _ _ _ _ _ _ _ _ _ _ _ 3 percent.
   d. 13 points are _ _ _ _ _ _ _ _ 20 points.
2. Write sentences using the Math Words.
   a. **fewer than** _____
   b. **greater than** _____
   c. **less than** _____
   d. **more than** _____

Bonus: Can you spell these four Math Words? Turn this paper over and spell them. Check your spelling.

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Subject: _____ Name: _____

Period: _____ Date: _____

Larger Numbers, Smaller Numbers

Read the problems. Circle the Math Words in them. Then answer the questions.

Math Words

fewer than	greater than
less than	more than

1. John earns $750 every month. Ralph earns $200 less than John. How much does Ralph earn?

   Ralph earns $200 less than what amount?

   _____

   ------- John's earnings
   − $2 0 0 less than John's earnings
   ---------- Ralph's earnings

2. City Bank pays an interest of 10 percent. The interest at Davis Bank is 2 percent greater than that. What is the interest at Davis Bank?

   Davis Bank pays 2 percent more than what amount?

   _____

   ---- percent interest at City Bank
   + 2 percent more interest
   -------- percent interest at Davis Bank

3. Vida buys 10 items. Maki buys 3 items fewer than Vida. How many items does Maki buy?

   Maki gets 3 items less than what amount?

   _____

   ---- items for Vida
   − 3 items less for Maki
   -------- items for Maki

4. There are 28 students in the first math class. The second class has 8 students more than that. How many students are in the second class?

   The second class has 8 students more than what amount?

   _____

   ---- students in the first class
   + 8 more students in the second class
   -------- total students in the second class

Bonus: Write the correct numbers in each math problem. Then find answers to those problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

More or Less?

Math Words

fewer than	less than
greater than	more than

What's the Question?

Circle the Math Words that compare numbers. Then answer the questions.

1. Martha has $235 in her savings. Her savings is $20 greater than Norm's. Is his savings more or less than $235?

   _____

2. Bell gas is $1.19 per gallon. Its price is $.05 more than Rexco gas. Is Rexco gas higher or lower than $1.19?

   _____

3. Mila scores 132 game points. She has 12 points fewer than Lew. Does Lew have more or less than 132 points?

   _____

4. Liz pays $2.50 for a movie. That's $2.00 less than regular price. Is the regular price higher or lower than $2.50?

   _____

Bonus: Set up a math problem for each word problem. Then find the answer.

What's the Fact?

These word problems are missing a fact. That fact has a number in it. Finish the sentence in each problem. Choose a number that makes sense.

1. Mark pays $25 for a pair of jeans.

   Sandy pays _____.

   How much less does Sandy pay than Mark?

   $2 5 what Mark pays
   − ____ what Sandy pays

   ---------- less than Mark

2. Tom works 40 hours a week.

   Greg works _____.

   How many more hours does Greg work than Tom?

   ---- hours Greg works
   − 4 0 hours Tom works

   --------- more hours than Tom

Bonus: Do the math for the word problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Clues to Add or Subtract

Math Words sometimes do this: They help you decide to add or subtract. Read each word problem. Circle the Math Words. Then answer the question. (The first is done. Use it as an example of how to answer the questions.)

Math Words

fewer than
greater than
less than
more than

1. Al worked 20 hours last week. This week, he works 3 hours (less) (than) last week. How many hours does he work this week?

To do the problem, you'd subtract 3 hours from 20 hours. Why?

Al works 3 hours less than last week.

2 0	hours last week
− 3	hours less this week
.....	hours this week

2. Marilu and Sam drive trucks. This week, Marilu drives 295 miles. Sam drives 55 miles more than Marilu. How many miles does Sam drive this week?

You'd add 55 miles and 295 miles. Why?

_____

2 9 5	miles Marilu drives
+ 5 5	miles more Sam drives
.....	miles Sam drives

3. Lee pays taxes to the state and federal governments. His total for state taxes is $112. His total for federal taxes is $154 greater than that. How much is his total for federal taxes?

You'd add $112 and $154. Why?

_____

$1 1 2	state taxes
+ 1 5 4	more than state taxes
.....	federal taxes

4. Lek needs 8 gallons of paint. Nick needs 2 gallons fewer than Lek. How many gallons does Nick need?

You'd subtract 2 gallons from 8 gallons. Why?

_____

8	gallons Lek needs
− 2	gallons less than Lek
.....	gallons Nick needs

Bonus: Find the answers to the math problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Words That Show How Much

Word Search

Four Math Words are hidden in this puzzle. Those words describe how much an amount is. Find the words and circle them. As you find each word, write it next to the puzzle. Then check your answers. Look at page 12 in your *Math Language* workbook.

U R E Q U A L L Y K I F G
F M E L E A S T I M O S T
I F I G K E V E N L Y A A

Math Words

1. _____
2. _____
3. _____
4. _____

It's Your Turn

Circle the Math Words in these problems. Then answer the questions.

1. You have a job serving food. You serve 200 people at breakfast. You serve 191 people at lunch, and 280 at dinner. What is the most number of people you serve?

   _____

2. You are cutting a pie for 6 people. You divide it evenly. How many pieces do you have?

   _____

3. You play three games of cards. You score 16 points in the first game. You score 21 points in the second game, and 12 points in the third. What is the least number of points you scored?

   _____

4. You and a friend have 4 cars to wash and wax. You divide the work equally. How many cars do you wash and wax?

   _____

Bonus: 1. Turn the paper over. See if you can spell the four Math Words.
2. Then write sentences using the words.

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Subject: _____ Name: _____

Period: _____ Date: _____

Shopping Through the Ads

Running Shoes on Sale!

Rike	$24.90
Ronner	$32.50
Vole	$40.98
Jan	$32.50

10-Speed Bicycle Sale

Twin ..	$ 89	Rely	$120
Ports ..	$150	Spido ..	$ 89

Shoe Sale

These sentences compare the prices of running shoes in the ad. Finish them. Use *equally, evenly, least,* and *most.*

1. Rike shoes cost the

   _ _ _ _ _ _.

2. Vole shoes cost the

   _ _ _ _ _.

3. Ronner shoes and Jan shoes are

   priced _ _ _ _ _ _ _ _.

4. You buy a pair of Rike shoes. Your brother helps you buy them. He pays $12.45. You pay the same amount. The two of you are dividing

   _ _ _ _ _ _ _.

Bonus: Figure this out: How much more do Vole shoes cost than each of the other shoes?

Bike Sale

Answer these questions about bicycles.

1. Which bicycle costs the most?

   _____

2. Which bicycle costs the least?

   _____

3. Which bicycles are equally priced?

   _____

4. Suppose you and a friend buy a Rely. You divide the cost evenly. Would you pay *more* than, *less* than, or *the same amount* as your friend?

   _____

Bonus: Cut out a sales ad from the newspaper. Write questions about the ad using *equally, evenly, least,* and *most.*

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Subject: _____ Name: _____

Period: _____ Date: _____

Most, Least, or the Same

Read the word problems. Circle the Math Words. Then answer the question about the word problem. (The first is done. Use it as an example of how to answer the question.)

Math Words
equally
evenly
least
most

1. Rob and Lou clean yards. On Saturday they make $24. They divide the money (evenly.) How much does Rob get?

   To do the problem, you'd divide $24 by what number? Why?

   You'd divide by 2. Both boys get the same amount.

2. 4 friends eat together in a restaurant. They get 1 check for $20. They share the cost equally. How much does each pay?

   You'd divide $20 by what number? Why?

   _____

3. Ruth earns $4 an hour. Some days she works 8 hours. Some days she works 6 hours. And some days she works 5 hours. How much does she make when she works the least?

   You'd multiply $4 by what number? Why?

   _____

4. Sandy has eaten 1,600 calories. She will choose one of these meals: a meal of 1,500 calories, one of 1,100 calories, or one of 500 calories. Suppose Sandy chooses the meal with the most calories. How many total calories will that add up to?

   You'd add 1,600 to what number? Why?

   _____

Bonus: Write the math problem for each word problem. Then find the answers to the problems. Use the space above.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 2: Math Word Check

Do the crossword puzzle. Use these Math Words from unit 2.

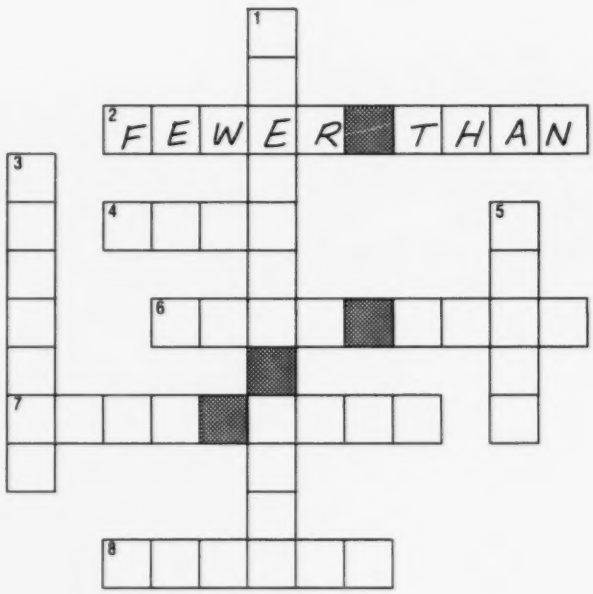
equally	least
evenly	less than
fewer than	more than
greater than	most

Across

2. 10 hours is _____ _____ 20 hours.
4. _____ means more than anything.
6. 140 pounds is _____ _____ 115 pounds.
7. Carol works 3 days. Yen works 5 days. Carol works _____ _____ Yen.
8. Aji cuts 4 inch wire into 2 inch pieces. He divides it _____.

Down

1. $35 is _____ _____ $25.
3. Monika and Andy divide $10 _____. Each gets $5.
5. Vera and Sara work 15 hours. Jess works 10 hours. He works the _____ hours.



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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 3: Changing Numbers

A. The Math Words in these sentences are in dark type. They show how a number changes. Finish the sentences. Write *larger*, *smaller*, *more*, or *less*.

1. **Raise** your pay and get _____ money.
2. **Increase** your savings to a _____ amount.
3. **Decrease** the number of players to a _____ team.
4. **Reduce** the price to _____ money.

B. Look carefully at these problems. Then finish the sentences about them.

1.
$$\begin{array}{rl} \$90 & \text{regular price} \\ -\ 15 & \text{discount} \\ \hline \$75 & \text{sale price} \end{array}$$

a. The price was **reduced to** _____.

b. It was **reduced from** _____.

c. It was **reduced by** _____.

2.
$$\begin{array}{rl} 30 & \text{hours} \\ +\ 10 & \text{hours} \\ \hline 40 & \text{hours} \end{array}$$

a. The time was **increased by** _____ hours.

b. It was **increased to** _____ hours.

c. It was **increased from** _____ hours.

C. Write sentences about these problems. Use these Math Words:

decreased to **decreased by** **decreased from**
raised to **raised by** **raised from**

1.
$$\begin{array}{rl} 50 & \text{feet} \\ +\ 25 & \text{feet} \\ \hline 75 & \text{feet} \end{array}$$

a. _____

b. _____

c. _____

2.
$$\begin{array}{rl} 280 & \text{miles} \\ -\ 80 & \text{miles} \\ \hline 200 & \text{miles} \end{array}$$

a. _____

b. _____

c. _____

Score: _____ no. right _____ no. wrong

M26

Unit pre-post test/***MATH LANGUAGE***, Unit 3, pp. 14–17.

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Subject: _____ Name: _____

Period: _____ Date: _____

Words That Show How Numbers Change

Word Search

Four Math Words are hidden in this puzzle. Those words show how a number can change. Find the Math Words and circle them. As you find each word, write it next to the puzzle. Then check your answers. Look on page 14 of your *Math Language* workbook.

J J I N C R E A S E R R
A A L R C O R E D U C E
D E C R E A S E L L L M
O O P G R A I S E Z Z E

Math Words

1. _____
2. _____
3. _____
4. _____

It's Your Turn

The math problems are about numbers that change. Use the Math Words and write about those problems. Use each word once. Underline the words in your sentences. (The first is done as an example.)

1. 6 hours before
   + 2 hours more
   ------ hours now

   Joe has a part-time job. His work hours were increased.

2. $ 1 4 cost before
   − 7 amount less
   ---------- cost now

3. 2 5 minutes before
   − 8 minutes less
   -------- minutes now

4. $ 2 9 0 rent before
   + 1 5 rent now
   ---------- rent now

Bonus: 1. Find the answers to the problems.
2. Turn this paper over. Spell the four Math Words. Then check your spelling.

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Subject: _____ Name: _____

Period: _____ Date: _____

Changing to Another Number

Larger or Smaller

Finish these sentences. Write *larger* or *smaller*.

1. Tet's boss **raised** his work hours to 8 hours. His hours changed from a number _____ than 8.
2. The price of a ticket was **decreased** to $10. The price changed from a number _____ than $10.
3. Rike running shoes were **reduced** to $20. The price changed from a number _____ than $20.
4. Mila's pay was **increased** to $600 per month. Her pay changed from a number _____ than $600.

Put In the Math Word

Copy these sentences. But change the word *went* to a Math Word. Use *raised, reduced, increased,* and *decreased*. Use each Math Word one time only.

1. The bill **went** from $26 to $18 per month.

_____

_____

$2 6 old bill
− 1 8 new bill
---------- how much it changed

2. The price **went** from $1.19 to $1.39.

_____

_____

$1.3 9 new price
− 1.1 9 old price
---------- how much it changed

3. Her work hours **went** from 16 to 18 hours.

_____

_____

1 8 new hours
− 1 6 old hours
-------- how much it changed

4. Heat **went** from 87 degrees to 72 degrees.

_____

_____

8 7 heat before
− 7 2 heat now
-------- how much it changed

Bonus: Find out how much the numbers changed in the problems above. Do the problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

What Happens to the Number?

These word problems are about numbers that change to new numbers. Circle the Math Words in the problems. Then answer the questions. (The first is done.)

Math Words

decrease	increase
raise	reduce

1. Charlie pays $275 per month for rent. His landlord will (raise) his rent. Will the rent change to more than $275? Or less?

   It will change to more.

   ------- new rent
   − $2 7 5 old rent
   ---------- how much it changes

2. Zack drives 55 miles per hour on the freeway. When he gets off the freeway, he will decrease his speed. Will his speed change to more than 55 miles per hour? Or less?

   _____

   5 5 mph old speed
   − ---- mph new speed
   -------- how much it changes

3. Teresa wants to buy a certain hair dryer. It costs $15.99. Its cost will be reduced soon. Will the price change to more than $15.99? Or less?

   _____

   $1 5 . 9 9 old price
   − ---------- new price
   ---------- how much it changes

4. Gary usually runs 4 miles every day. He plans to increase the number of miles that he runs. Will Gary run more than 4 miles per day? Or less?

   _____

   ------ new number of miles
   − 4 old number of miles
   ------ how much it changes

Bonus: For each problem, think of a new number that makes sense. Write that number in the math problem. Then do the problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

How Do Numbers Change?

The math problems at right show what a number used to be. They show how much the number changes. And they show what the number changes to.

1. **The price of movie tickets was raised. How did the price change? Use *raised from, raised by,* and *raised to.* (The first is started.)**

   a. The price was raised from $5.00.

   b. _____

   c. _____

$5.00	old price
+ .50	raise
$5.50	new price

2. **The interest rate at a bank decreased. How did the rate change? Use *decreased from, decreased by,* and *decreased to.***

   a. _____

   b. _____

   c. _____

11%	old rate
− 1%	decrease
10%	new rate

3. **Jo's work hours were reduced. How did they change? Use *reduced from, reduced by,* and *reduced to.***

   a. _____

   b. _____

   c. _____

8	old work hours
− 2	hours reduced
6	new work hours

4. **Momi's baby is gaining weight. How did his weight change? Use *increased from, increased by,* and *increased to.***

   a. _____

   b. _____

   c. _____

8	pounds (old weight)
+ 2	pounds increase
10	pounds (new weight)

Bonus: Make up some math problems that show how a number changes. Then write sentences that tell about the change. Use the other side of this paper.

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Subject: _____ Name: _____

Period: _____ Date: _____

Changing From, By, and To

Read each word problem. The Math Words in dark letters show how a number changes. Read the question in the problem. Then write another question using the Math Word and *from*, *by*, or *to*. (The first is done.)

1. Concert tickets used to cost $10. But the price was **raised** by $2. What is the new price of the tickets?

   What was the price raised to?

   $1 0 old price
   + 2 raise
   ---------- new price

2. Nette works 32 hours a week. She used to work fewer hours. But they were **increased** by 12 hours. How many hours did she work before?

   _____

   3 2 hours now
   − 1 2 hours more
   -------- hours before

3. Randy used to drive to work in 45 minutes. But now the time is **decreased** to 25 minutes. How many minutes less does Randy drive?

   _____

   4 5 minutes before
   − 2 5 minutes now
   -------- minutes less

4. The price of a coat is **reduced** by $25. It is now $80. What did the price used to be?

   _____

   $8 0 new price
   + 2 5 less
   ---------- old price

Bonus: 1. Find the answer to the problems.
2. Bring in a magazine or newspaper ad about a sale. Look for ads that use the Math Words. Write sentences explaining how the prices of items changed or will change.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 3: Math Word Check

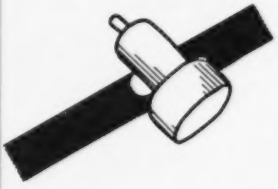
Furniture Sale

Rocking Chair
Now $89
Was $100

Sofa
Now $299
After sale, $400

Table
Now $139
Save $41

Track Light
Now $19
Used to be $30



On Sale!

The ad above is about a furniture sale. Circle the words that tell how the prices changed. Then answer these questions.

1. What will the sofa price be raised to after the sale?

   _____

2. What price is each light reduced from?

   _____

3. How much is the price of the table reduced by?

   _____

4. What price is the rocking chair decreased to?

   _____

Changing Prices

What happens to prices during a sale? Read these sentences and circle the right Math Word.

1. When a store has a sale, it (*reduces, increases*) its prices.

   _____

2. After a sale, the store (*decreases, raises*) the prices.

   _____

Bonus:

Figure out the answers to these questions.

1. How much is the chair reduced by?
2. What is the table reduced from?
3. How much will the sofa be increased by?
4. How much is a track light reduced by?

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 4: Words About Money

A. Draw a line from each Math Word to the phrase that best describes it.

1. **charge**	a. To add an amount to what you already have.
2. **credit**	b. To take out money from a savings account.
3. **deduct**	c. To add an amount to what you owe.
4. **deposit**	d. To add money to a savings account.
5. **withdraw**	e. To take out money from a paycheck.

Which Math Words above show that you add money to something?

_____

Which Math Words show that you subtract money from something?

_____

B. Now look at the Math Words below. Choose the right Math Word for each sentence.

balance **discount** **percent**
change **interest**

1. A _____ is a lower price.
2. He was charged an _____ for buying on time.
3. The bank pays 10 _____ of that amount.
4. The _____ of my checking account is $50.
5. She gives the cashier $5 and gets $1 in _____.

Score:

_____ no. right

_____ no. wrong

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Subject: _____ Name: _____

Period: _____ Date: _____

Talking About Money

What's the Word?

These Math Words are used in problems about money. Some letters are missing. Fill in the missing letters. Then check your answers. Look at page 18 of your *Math Language* workbook.

1. d _ p _ s i _
2. _ e _ u c _
3. w _ t _ d r _ w
4. c _ _ d i _
5. c h _ _ g _

It's Your Turn

The math problems are about money. The money is added to an amount. Or it is taken away. Finish the sentences about each problem. Use the Math Words.

1. Lin has a restaurant bill of $7.50. He orders a dessert. The restaurant _ _ _ _ _ _ s $2.00 for it.

$7.50 bill before
+ 2.00 for dessert
---
bill now

2. Kuni paid a store $30. He pays a new bill. The store _ _ _ _ _ _ s $17 to what he's paid.

$30 paid already
+ 17 for new bill
---
now paid

3. Bob owes Amy $8. He buys her lunch. She _ _ _ _ _ _ s $3.

$8 owed before
− 3 less
---
owes now

4. Tom has $100 in his savings account. He _ _ _ _ _ _ _ _ s $50.

$100 savings before
− 50 less
---
savings now

5. Ann has $300 in her bank account. She _ _ _ _ _ _ _ s $10.

$300 account before
+ 10 more
---
account now

Bonus: 1. Find the answers to the problems.
2. Turn this paper over. Spell the Math Words. Check your spelling.

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Subject: _____ Name: _____

Period: _____ Date: _____

Money Word Check

What's the Meaning?

Draw a line from each Math Word to its meaning. Then check your answer. Look on page 18 of your *Math Language* workbook. (One is done.)

1. charge	a. to add to what you have
2. credit	b. to add money to an account
3. deduct	c. to add to what you owe
4. deposit	d. to take money from an account
5. withdraw	e. to take out or take away

What's Wrong?

The wrong Math Words are used in these sentences. Cross out each word. Write the correct Math Word above it. Explain why you chose that word. (One is done.)

1. Jim has $15 in his checking account. He ~~withdraws~~ deposits $250. He now has $265 in his account.

   Jim now has more money. Deposit means he added money to his account.

2. You earn $125, but you take home $115. That's because your boss **credits** $10 from your pay for taxes.

   _____

3. You owe a store $250. You make a payment of $10. The store **deducts** that to your payments.

   _____

4. Len needs money to buy some things. So he **charges** $150 from his savings account.

   _____

5. Emma rents cable TV at $12 per month. The company **deposits** $25 for putting it in.

   _____

Bonus: Write sentences like the ones above. Use the wrong Math Word. Then give the sentences to a classmate to correct. Check your classmate's answers.

M35

Understanding words about money/***MATH LANGUAGE,*** Unit 4, p. 18.

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Subject: _____ Name: _____

Period: _____ Date: _____

Saving and Spending

Math Words

charge deduct
credit deposit
withdraw

Read these word problems. Look at the question in each problem. Write that question. But change the word in dark letters to a Math Word. Use a Math Word once only.

1. Jo has $85 in her savings account. She takes out money to buy a coat. Now she has $15 left in her savings. How much does Jo **take out**?

   How much does Jo withdraw?

   $8 5 Jo had
   − 1 5 Jo has left
   --------- Jo takes out

2. Tim owes a store $55. He buys some tools. The store adds the cost to his bill. Now he owes $69. How much does the store **add** to his bill?

   _____

   $6 9 Tim now owes
   − 5 5 Tim used to owe
   --------- cost of tools

3. Betty is paying off a bank loan. So far she's paid $275. She makes a payment. The bank adds it to the $275. Now her payments total $350. How much does the bank **add** to her payments?

   _____

   $3 5 0 new total
   − 2 7 5 old total
   ---------- the bank adds

4. Don has $15 in his checking account. He adds money to it. It now has $230. How much does Don **put** into his checking account?

   _____

   $2 3 0 total now
   − 1 5 total before
   ---------- Don puts in

5. Larry gets paid $40 for working 8 hours a day. He comes to work late. His boss pays him $25 for that day. How much does his boss **take out** from his pay?

   _____

   $4 0 pay for 8 hours
   − 2 5 pay Larry gets
   --------- boss takes out

Bonus: Find the answers to the problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Money Problems

Read each word problem. Circle the Math Word in the problem. Then answer the question.

Math Words

charge deduct
credit deposit
withdraw

1. Carol has $250 in her savings account. She withdraws $175. How much remains in her account?

   To do the problem, you'd subtract $175 from $250. Why?

   _____

2. Jan has paid $400 for her bank loan. She makes a payment of $80. The bank credits the $80 to her payments. How much has she paid in all?

   You'd add $80 to $400. Why?

   _____

3. Dan earns $600 a month. His boss deducts $118 for taxes. How much does Dan take home?

   You'd subtract $118 from $600. Why?

   _____

4. Sandy has $50 in her checking account. She deposits $450. What is her new total?

   You'd add $450 to $50. Why?

   _____

5. Randy has a charge account with a gasoline company. He owes $28. He charges $15 for gas. How much does he now owe?

   You'd add $28 and $15. Why?

   _____

Bonus: Do the problems. Use the space at right.

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Subject: _____ Name: _____

Period: _____ Date: _____

The Word's the Thing

Math Words

charge
credit
deduction
deposit
withdrawal

Money Word Puzzler

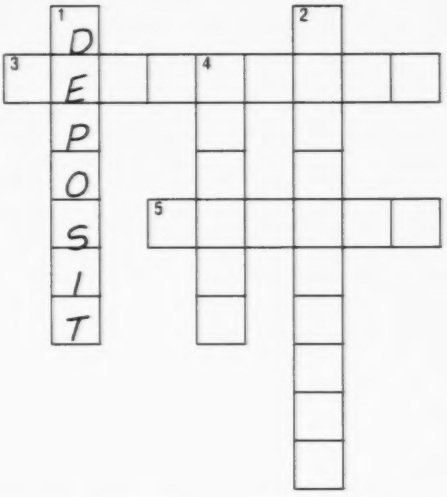
Sometimes a Math Word means to do something. For example, *deposit* means *to put into*. But sometimes that Math Word can mean a thing. For example, a deposit can mean **money** that's put into something. The Math Words at right are like that. Notice that two of the words have endings. Use the words to do this puzzle.

Across

3. An amount that's taken out of something like a paycheck.
5. An amount that's added to something.

Down

1. An amount that you put into something like an account.
2. An amount that's taken out of something like an account.
4. An amount that's added to a bill.



What's the Word?

Circle the Math Words in the sentences. Then answer the questions. Use *adds* or *takes out* in your answers. (The first is done.)

1. Tom makes a $20 withdrawal from his savings account. What does he do with the $20?

   He takes out the $20.

2. Nan calls a garage to tow her car and fix it. The garage gives her a bill for fixing the car, and a $15 tow charge. What does the garage do with the $15?

   _____

3. Mac has a credit account at a store. The store gives him a $9 credit for his account. What does the store do with the $9?

   _____

4. Jim earns $200 a week. His boss makes a $5 deduction on Jim's paycheck. What does Jim's boss do with the $5?

   _____

5. Lee has $300 in her account. She makes a $50 deposit. What does Lee do with the $50?

   _____

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Subject: _____ Name: _____

Period: _____ Date: _____

More Words About Money

Hidden Money Words

Read each line across, from left to right. Find the five Math Words and circle them. As you find them, write them on the lines next to the puzzle. Check your spelling. Look on page 20 of your *Math Language* workbook.

T T D I S C O U N T R R A
U U L S P E R C E N T G H
B A L A N C E R G H N A O
J O J K B C H A N G E Z D
O I N T E R E S T A A Y Z

Money Words

1. _____
2. _____
3. _____
4. _____
5. _____

Money Math

Draw a line from the Math Word to its meaning. Then check your answers. Look on page 20 of your *Math Language* workbook.

1. balance
2. change
3. discount
4. interest
5. percent

a. money a person gets back
b. a lower price
c. amount a person now has
d. part of a whole amount
e. a charge to borrow money

Use the Word

Write sentences using the Math Words.

1. **balance** _____
2. **change** _____
3. **discount** _____
4. **interest** _____
5. **percent** _____

Bonus: Give yourself a spelling test. Turn this paper over and spell the five Math Words. Then look at page 20 in *Math Language* and check yourself.

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Subject: _____ Name: _____

Period: _____ Date: _____

Words About Buying

Circle all the Math Words in each word problem. Then answer the question.

Math Words

balance discount
change interest
percent

1. Sara buys a record for $6.95. She pays a 6 percent sales tax. That's $.42. How much does she pay in all?

$.42 is 6 percent of what amount?

_____

$6.95 price per record
+ .42 tax (6 percent)

---------- Sara pays

2. Camera film is at a discount: $2.99 per roll. The regular price is $4.99. How much do you save if you buy it at its discount price?

$2.99 is the discount of what amount?

_____

$4.99 regular price
− 2.99 discount price

---------- what you save

3. Steve pays his lunch bill. He gives the cashier $5.00. His change is $2.55. How much is his bill?

$2.55 is change from what amount?

_____

$5.00 what Steve gives
− 2.55 change

---------- Steve's bill

4. Ali buys a stereo that costs $770. She buys it on time. The store charges $105 interest. What is the total cost that Ali pays?

$105 is interest on what amount?

_____

$770 price of stereo
+ 105 interest

---------- total cost

5. Jim deposits $300 into his checking account. His balance is now $415. What was Jim's balance before?

$415 is the balance after adding what amount?

_____

$415 balance now
− 300 deposit

---------- balance before

Bonus: 1. Find the answers to the problems.
2. What was the last thing that you bought? Write a word problem about it. Use at least one of the Math Words on this page.

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Subject: _____ Name: _____

Period: _____ Date: _____

Buying Problems

Circle the Math Words in the problem. Then look at the question in the problem. What does it ask? Write a sentence in your own words. (The first is done.)

Math Words: balance discount change interest percent

1. Jerry owed $150 on his gas charge card account. He pays $75. What's his new balance?

   The question asks How much Jerry owes.

   ------- what Jerry owed
   − ------- what he pays
   ---------- how much he now owes

2. A shoe store is having a sale. All shoes are 10 percent off. A pair of shoes usually costs $30. Now it costs $27. How much does the store take off?

   The question asks _____

   _____

   ----- regular price
   − ----- sale price
   --------- how much 10 percent is

3. Win buys a dress at a discount. The regular price is $40. She pays $28. How much is the discount?

   The question asks _____

   _____

   ----- regular price
   − ----- sale price
   --------- how much is taken off

4. Moe's bill is $6.18. He pays with $20.00. How much is his change?

   The question asks _____

   _____

   ---------- what Moe pays
   − ---------- Moe's bill
   ---------- how much he gets back

Bonus: Look at the word problems. Then write the numbers that belong in each math problem. Find the answers.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 4: Math Word Check

These paragraphs are about buying a used car. Finish the paragraphs. Use the Math Words that are next to each paragraph.

1. You read an ad in the newspaper. It says, "Big _____! All cars at a lower price: 25 _____ off!"

   discount
   interest
   percent

2. You go to the car dealer. You decide on a car. The salesman says, "If you pay in cash, I'll _____ you $2,000. If you buy on time, your _____ will be $400."

   change
   charge
   interest

3. You have to put some money down. So you go to your bank. And you _____ $300 from your savings account.

   deposit
   withdraw

4. You give the salesman the $300. You say, "I want to put $240 down as a _____ on the car."

   balance
   deposit

5. He gives you $60 in _____. Then he _____ the $240 from $2,400. The _____ of what you owe is now $2,160. He says you now have a $240 _____ in payment.

   balance
   change
   credit
   deducts
   withdraw

Bonus:

1. On the other side of this paper, write a story about buying something. Use as many of the Math Words as you can.
2. Get some of these things: bank statements, check stubs, sales slips, charge card statements, bills, store ads, and food coupons. On the things, find Math Words. Circle the words. Explain to the class what the words mean on those things.

M42

Unit review/***MATH LANGUAGE,*** Unit 4, pp. 18–21.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 5: Words That Measure

Standard Units of Measure

The Math Words below are used to show standard measurements. What kinds of things do they measure? Write the words where they belong. (One of the words is used twice.)

cup	**ounce**	**ton**
foot	**pint**	**tablespoon**
gallon	**pound**	**teaspoon**
inch	**quart**	**yard**
mile		

1. Units that measure length:

   — — — —

   — — — —

   — — — —

   — — — —

2. Units that measure weight:

   — — — — —

   — — — — —

   — — —

3. Units that measure amounts in cooking:

   — — —

   — — — — — — — — — —

   — — — — — — — — —

4. Units that measure liquids:

   — — —

   — — — — — —

   — — — —

   — — — — —

Metric Units of Measure

These Math Words are used to show metric measurements. Write the words where they belong.

centimeter	**kilometer**	**meter**
gram	**liter**	**milliliter**
kilogram		

1. Units that measure liquids:

   — — — — —

   — — — — — — — — — —

2. Units that measure length:

   — — — — — — — — — —

   — — — — — — — — —

   — — — — —

3. Units that measure weight:

   — — — —

   — — — — — — — —

Score:

_____ no. right

_____ no. wrong

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Subject: _____ Name: _____

Period: _____ Date: _____

Cooking Measures

Here is part of a recipe. Underline the units of measure in it. (You should underline a number and a Math Word.)

Math Words

cup
tablespoon
teaspoon

Banana Griddle Cake

What you need:

$\frac{1}{2}$ cup + 1 tablespoon lemon juice
2 teaspoons baking powder
2 tablespoons melted butter
4 eggs
2 cups milk
2 cups flour
$1\frac{1}{2}$ teaspoons nutmeg
3 tablespoons sugar
4 bananas

1. Do you use more baking powder or flour?

   _____

   Why do you say that? (Hint: Which unit is bigger?)

   _____

2. Do you use more nutmeg or sugar?

   _____

   Why do you say that?

   _____

3. Do you use more lemon juice or butter?

   _____

   Why do you say that?

   _____

4. Look at page 22 of your *Math Language* workbook. Change these units into other units.

   a. $\frac{1}{2}$ cup lemon juice = _____ tablespoons

   b. 3 teaspoons of butter = _____ tablespoon

   c. 3 tablespoons of sugar = _____ teaspoons

Bonus:
Look in a cookbook. Find a recipe you like. Make it and bring what you make to class.

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Subject: _____ Name: _____

Period: _____ Date: _____

Liquid Measures

Suppose you're buying the things listed at right. Read the list. Underline the units of measure. (You should underline a number and a Math Word.) Then answer the questions.

Math Words

gallon
pint
quart

1. What do you buy more of: black paint or red paint?

   _____

   Why do you say that? (Hint: Which unit is bigger?)

   _____

2. What do you buy more of: wall plaster or white paint?

   _____

   Why do you say that?

   _____

3. What do you buy more of: wall plaster or black paint?

   _____

   Why do you say that?

   _____

4. Look at page 23 in your *Math Language* workbook. Change these units into other units.

   a. 2 pints black paint = _____ quart

   b. 2 quarts wall plaster = _____ pints

   c. 1 gallon red paint = _____ quarts

Buy at paint store

2 gallons white paint
2 pints black paint
2 quarts wall plaster
1 gallon red paint

Bonus:
Look at ads from grocery stores, drugstores, and hardware stores. Bring in ads that show things in gallons, quarts, and pints. Make a poster with the ads.

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Subject: _____ Name: _____

Period: _____ Date: _____

The Weight of Things

Suppose you work in a tomato cannery. You do all the jobs that are listed at right. Read the list. Underline the units of measure. (You should underline a number and Math Word.) Then answer the questions.

Math Words

ounce
pound
ton

1. Which is heavier: the 8 ounce cans or the 2 pound cans?

   _____

   Why do you say that? (Hint: Which unit is bigger?)

   _____

2. Which is heavier: the $4\frac{1}{2}$ ounce cans or 1 ton of tomatoes?

   _____

   Why do you say that?

   _____

3. Which is heavier: the 2 pound cans or 1 ton of tomatoes?

   _____

   Why do you say that?

   _____

4. Look at page 24 of your *Math Language* workbook. Change these units into other units.

   a. 16 ounce can of tomatoes = _____ pound can

   b. 2 pound can of tomatoes = _____ ounce can

   c. 2 tons of tomatoes = _____ pounds

Jobs for Today

1. Count 8 ounce cans.
2. Send 2 pound cans to Dept. A.
3. Stack 4½ ounce cans in west end.
4. Help unload 1 ton of tomatoes. (Comes in around 2 p.m.)

Bonus:
Get two scales: one that measures ounces, and one that measures pounds. Find out what different things in your classroom weigh.

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Subject: _____ Name: _____

Period: _____ Date: _____

Measuring Length

Read this list of track events. Underline the units of measure. (You should underline a number and a Math Word.) Then answer the questions.

Math Words

foot
inch
mile
yard

Event	Score
1. 100 yard dash	10.2 seconds
2. 1 mile run	7.12 minutes
3. broad jump	18 feet
4. high jump	6 feet 4 inches

1. Which is farther: 100 yards or 1 mile?

   _____

   Why do you say that? (Hint: Which unit is bigger?)

   _____

2. Which is farther: 18 feet or 100 yards?

   _____

   Why do you say that?

   _____

3. Which is farther: 4 inches or 6 feet?

   _____

   Why do you say that?

   _____

4. Look on page 25 of your *Math Language* workbook. Change these units into other units.

   a. 1 mile = _____ yards

   b. 1 foot = _____ inches

   c. 24 inches = _____ feet

   d. 1 yard = _____ feet

Bonus:
Get a yardstick. Measure things around the room in inches, feet, and yards. Write down the measurements.

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Subject: _____ Name: _____

Period: _____ Date: _____

Metric Measures

Read this health report. Underline the metric units of measure in it. (You should underline a number and a Math Word.) Then answer the questions.

HEALTH REPORT

Name: Joe Williams Age: 17

Weight: 81 kilograms _____

Height: 1.7 meters _____

Marks: Birthmark on right hand,
1 centimeter wide _____

Health: Very good.
He runs 2.5 kilometers _____

Daily diet: Fats - 60 milliliters
Liquids - 2 liters
Protein - 9 grams

Math Words

centimeter
gram
kilogram
kilometer
liter
meter
milliliter

1. Which is longest: 1 centimeter, 2.5 kilometers, or 1.7 meters?

   _____

   Why do you say that? (Hint: Which unit is bigger?)

   _____

2. Which is more: 60 milliliters or 2 liters?

   _____

   Why do you say that?

   _____

3. Which is more: 9 grams or 81 kilograms?

   _____

   Why do you say that?

   _____

Bonus:
Find out what metric units are in pounds, feet, inches, and miles. Then figure out what the measurements on the health report are equal to. Write them next to the metric units on the report.

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Subject: _____ Name: _____

Period: _____ Date: _____

Words About Measuring

Measuring Liquids

Five words in this puzzle are names of units that measure liquids. Read each line across, from left to right. Find the Math Words, and circle them.

K K P I N T O L I T E R
Y P L G A L L O N G H T
M I L L I L I T E R A A
G G G L Q U A R T N B B

Measuring Weight

These words are names of units that measure weight. Finish the words.

1. k _ l _ g r _ m
2. _ _ n
3. _ o _ n d
4. _ r _ m
5. _ _ n c _

Measuring Length

These words are names of units that measure length. Finish the words.

1. k
2. i _ _ h
3. m _ l _
4. _ o _ t
   m
5. _ e t _ r
6. c _ n t _ m _ t e _
   e
7. _ a r _

Math Words

gallon
liter
milliliter
pint
quart

gram
kilogram
ounce
pound
ton

centimeter
foot
inch
kilometer
meter
mile
yard

Bonus:

1. Learn to spell the Math Words.
2. Choose five (or more) of the Math Words. On the other side of this paper, write sentences using those words.

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Subject: _____ Name: _____

Period: _____ Date: _____

Table of Measures

Dictionaries and encyclopedias usually have tables of measures. Look for them in one of those books. (Look under *Measurements.*) Use them to finish this table.

Units for Cooking

_____ teaspoons = 1 tablespoon
_____ tablespoons = 1 cup

Units of Liquid Volume

_____ pints = 1 quart
_____ quarts = 1 gallon

Units of Length

_____ inches = 1 foot
_____ feet = 1 yard
_____ feet = 1 mile

Units of Weight

_____ ounces = 1 pound
_____ pounds = 1 ton

Units of Time

_____ minutes = 1 hour
_____ hours = 1 day
_____ days = 1 week
_____ days = 1 year
_____ weeks = 1 year
_____ months = 1 year

Other Measures

What other units of measure are used a lot where you live? (For example, a *bushel* and a *peck.*) Write the units below. Write what smaller units make up the larger ones. (Use the back of this page, if you need more room.)

Number	Small Units		Large Units
_____	_____	= 1	_____
_____	_____	= 1	_____
_____	_____	= 1	_____
_____	_____	= 1	_____

Bonus: Make your own table of metric units.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 6: Abbreviations and Symbols

Write the abbreviations for these Math Words.

A. Short Words

1. amount _____
2. balance _____
3. deposit _____
4. each _____
5. interest _____
6. total _____

B. Short Measures

1. cup _____
2. tablespoon _____
3. teaspoon _____
4. inch _____
5. foot _____
6. yard _____
7. mile _____
8. pint _____
9. quart _____
10. gallon _____
11. ounce _____
12. pound _____

C. Short Metrics

1. gram _____
2. kilogram _____
3. milliliter _____
4. liter _____
5. centimeter _____
6. meter _____
7. kilometer _____

D. Symbols

Write the symbols for these Math Words.

1. add _____
2. subtract _____
3. multiply _____
4. divide _____
5. equals _____
6. each _____
7. per _____
8. number _____
9. less than _____
10. more than _____
11. cent _____
12. dollar _____
13. percent _____
14. decimal point _____
15. inch _____
16. foot _____
17. pounds _____

Score: _____ no. right _____ no. wrong

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Subject: _____ Name: _____

Period: _____ Date: _____

What Does It Stand For?

Find out what each abbreviation or symbol stands for. Then write a sentence using it. (One is done for you to follow as an example.)

	Abbreviation or Symbol	What it stands for
1.	6 in	6 inches
	The pencil is 6 inches long.	
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Note to the teacher: Write in abbreviations and symbols or choose some for the student to copy.

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Subject: _____ Name: _____

Period: _____ Date: _____

More Abbreviations and Symbols

Abbreviations and symbols are used on many things in real life, such as labels on cans and packages. They are also used in store ads. Find one of those things. Search for all the different abbreviations and symbols on it. Then write what you find below.

Name of food label or ad: _____

Abbreviation	**What it stands for**

Symbol	**What it stands for**

Bonus: Make up your own food label or ad. Use the abbreviations and symbols you've learned. Write it on the other side of this paper.

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UNDERSTANDING WORD PROBLEMS

Workbook by: Mary Friedland / Winifred Ho Roderman

WorkMasters™ by: Suzanne Altholz Nelson / Mary Friedland / Susan D. Echaore / Winifred Ho Roderman

Teacher's Guide by: Katherine D. Perez, Ed.D.
Director, Special Education, Saint Mary's College, Moraga, California

Consultant: Phyllis Kaplan, Ph.D.
Department of Educational Psychology, California State University, Hayward, California

Contents

Teacher's Guide **W2–W6**
- Teaching Suggestions W2
- Workbook Answer Key W4
- WorkMasters Answer Key W5

WorkMasters **W7–W54**
Workbook pages for each WorkMaster are listed in parentheses.

Unit 1: Math Stories **W7–W14**
- Unit pre-post test W7
- Real-Life Math Problems *(p. 4)* W8
- One-Step Problems *(pp. 4–31)* W9
- More One-Step Problems *(pp. 4–31)* W10
- Math Dictionary *(p. 5)* W11
- Ask a Question *(p. 7)* W12
- What's the Question? *(p. 8)* W13
- Unit review: Word Problem Check *(pp. 4–9)* W14

Unit 2: Is That a Fact! **W15–W23**
- Unit pre-post test W15
- What Do You Need to Know? *(p. 10)* W16–W17
- What Do the Numbers Stand For? *(p. 11)* W18
- Find the Facts *(p. 11)* W19
- Making Sense *(p. 12)* W20–W21
- Circle the Right Facts *(p. 13)* W22
- Unit review: Word Problem Check *(pp. 10–14)* W23

Unit 3: Which Operation? **W24–W30**
- Unit pre-post test W24
- Question Clues *(p. 16)* W25
- Find the Clue in the Question *(p. 16)* W26
- Find the Clues in the Facts *(p. 17)* W27
- Find the Clues in the Words *(p. 18)* W28
- More Clue Words *(p. 18)* W29
- Unit review: Word Problem Check *(pp. 15–19)* W30

Unit 4: Two or More Math Steps **W31–W40**
- Unit pre-post test W31
- Two-Step Problems *(p. 21)* W32–W33
- What's the First Step? *(p. 22)* W34–W35
- Step By Step *(p. 23)* W36
- Writing Two-Step Problems *(p. 23)* W37
- Unit review: Word Problem Check *(pp. 20–24)* W38; W39
- One-Step and Many-Step Problems *(pp. 21–24)* W40

Unit 5: Facts from Everywhere **W41–W52**
- Unit pre-post test W41
- Facts on a Form *(p. 25)* W42–W43
- Facts on a Chart *(pp. 26–27)* W44
- Math in a Graph *(p. 27)* W45–W46
- Which Form? *(p. 28)* W47–W48
- Looking for the Right Facts *(p. 29)* W49–W51
- Unit review: Word Problem Check *(pp. 25–30)* W52

Unit 6: It's Your Turn **W53–W54**
- One-Step Math Story *(p. 31)* W53
- Many-Step Math Story *(p. 31)* W54

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UNDERSTANDING WORD PROBLEMS Teacher's Guide

by Dr. Katherine D. Perez

OVERVIEW

Understanding Word Problems teaches students to comprehend and solve word problems by using logical thinking. This workbook is the second in the Janus ***Math in Action: Word Problems*** series. It continues the series' use of language-art techniques to help students analyze word problems.

Understanding Word Problems is written to help students learn to read word problems analytically. Students learn to locate important information in the problem, and then use it to write a corresponding math problem.

OBJECTIVES OF THIS WORKBOOK

Upon completion of this workbook and corresponding WorkMasters the student will be able to:

- demonstrate a basic understanding of the parts that make up a word problem: facts, operational clues, and a math question;
- use strategies that help him locate those parts;
- discriminate between relevant and non-relevant information in a word problem;
- recognize and state when a word problem involves more than one math step;
- construct simple word problems;
- rewrite word problems as math problems;
- apply his learning to everyday situations.

TEACHING SUGGESTIONS

Introducing the Workbook

You might introduce *Understanding Word Problems* this way: Read a letter from a personal advice column such as "Dear Abby" to your students. Then discuss the letter. Ask students: *What do you think the problem is? How would you answer it? What facts did you use to get that answer?*

Next, ask them: *How is understanding a word problem like understanding the problem we just talked about?* After your discussion, hand out the workbooks. Give students time to leaf through them, and then, as a class, read the introduction.

Reinforcing Vocabulary

The math vocabulary of *Math Language* carries over to *Understanding Word Problems*. Have students keep the glossary from *Math Language* handy. (You might detach the glossary from their books and laminate it.) Then review the math words as students again encounter them. Point out new instances of how the words can be used.

Visualizing the Word Problem

You may have special-needs students who cannot abstract or who have difficulty visualizing what they read. To help focus these students on the story-telling aspect of a word problem, you might use a questioning pattern such as this: *What is the setting in the problem? Is there a character? Who is it? What is he (or she) doing? What kind of problem does she (or he) have? What can she (or he) do to fix the problem?*

Real-Life Situations

Help students understand that word problems are about actual math problems that we do in real life. Here is one activity that reinforces that concept (it also reviews the math operations): Give students copies of the same grocery store ad (or show it on an overhead projector). Then tell them stories about someone shopping for the things in that ad. Include situations that use each of the four math operations. Have students tell you what math operation the person is doing, and why they chose that operation.

Challenge Them

Motivate your special-needs students by helping them see their skills build up. Early on in their study of *Understanding Word Problems*, give students a tough word problem they won't be able to understand. (The problem might be badly written or use a sophisticated vocabulary beyond their comprehension.) Ask them to rewrite the problem in their own words. Give them the same problem three or four times throughout the course. Each time they rewrite the problem, students should be able to understand more of it. Have them keep a running score of their success in their math folder.

Good Habits

Stress the kinesthetic elements of understanding word problems. Help your students acquire these helpful habits whenever they read a word problem: underline the question; circle the facts; put an **X** above words they don't know; put a ✓ above words that are operational clues.

Encourage students to always retell a word problem in their own words and to justify their choice of facts to solve it. Emphasize that labeling numbers and answers in the math problems they set up will also help them understand what they are to solve.

TEACHING THE UNITS

This section contains brief descriptions of each workbook page and suggested enrichment activities. Corresponding WorkMasters are listed in parentheses after each page description.

Unit 1: Math Stories

Students become familiar with two hints that help them understand word problems: find out what hard words mean, and underline the question. (Unit pre-post test, W7; W9; W10; unit review, W14)

PAGE 4: **Math Stories**
Students learn that word problems are math problems told with words and that they are often about real-life math problems. You might begin this unit by discussing real-life math problems the students have had to figure that day. On the board, write a word problem about one of their math problems. (W8)

PAGE 5: **Know the Words**
In order to understand a word problem, students must first know all the words in that problem. Help them conclude that they should always find out the meanings of unfamiliar words. Refer them to the glossary of math words on page 31 of *Math Language*. (W11)

PAGE 6: **What Answer Do You Find?**
Students learn to locate and underline the sentence (math question) in a word problem that tells them what answer to find.

PAGE 7: **A Math Question**
Word problems usually ask for these kinds of answers: how much a thing is, or how many things there are. You might prepare students for the exercise by discussing the kinds of answers they find for real-life math problems. (W12)

PAGE 8: **What's It All About?**
A questioning model helps students reason out what a math question is asking. (W13)

PAGE 9: **Math Workout**
Students apply what they learned in the unit. (W14)

Enrichment Activities
- Make a word problem bulletin board. Each week, display a different large picture or poster that presents possible math problems. Have students make up word problems about it. (They might write their problems or record them on tape.) Post their word problems next to the picture.
- Play "What's the Math Story?" Group students into teams. Write a math question on the board. Have each team write or tell a math story about the question.

Unit 2: Is That a Fact!

Students learn to find the facts in word problems and to discriminate relevant facts when many facts are given. (Unit pre-post test, W15; W9; W10; unit review, W23)

PAGE 10: **Is That a Fact!**
Students learn that in order to solve a word problem, they must have all the right facts. (W16–W17)

PAGE 11: **Things and Numbers**
Math facts are made up of things and numbers. Students conclude that understanding what thing the math question asks about helps them know what facts to use.
To reinforce this lesson, discuss with students the facts they figure with in real-life math problems. For example, ask them: *Suppose you're buying gas for your car. What facts would you use to know how much to pay?* Answer: You'd use the price per gallon of gas and the number of gallons you buy. (W18; W19)

PAGE 12: **Does the Fact Make Sense?**
A questioning model helps students analyze what facts they'd use to solve a word problem. (W20–W21)

PAGE 13: **Choose the Right Facts**
Students follow a third hint to choose and circle the right facts they need to solve a word problem. (W22)

PAGE 14: **Math Workout**
Students apply their learning from units 1 and 2. (W23)

Enrichment Activities
- Give students word problems written as cloze exercises. Have them fill in math facts that make sense.
- As a class, make up a story called "One Day in My Life." Have the "I" character encounter and solve real-life math problems throughout one day.

Unit 3: Which Operation?

Students learn how to analyze a word problem in order to choose the correct math operation. Before beginning this unit, you might review what happens to numbers in the four math operations. Review with students that when they add or multiply, they put numbers together. When they subtract, they find part of an amount. When they divide, they find one equal part of things. (Unit pre-post test, W24; W9; W10; unit review, W30)

PAGE 15: **Which Operation?**
Students examine ways to choose math operations. Help students conclude that they should always read a word problem carefully and completely.

PAGE 16: **Questions Can Be Clues**
Students can use the math question as a clue to choosing a math operation because it usually asks about a *total amount, part of an amount,* or *one of something*. (W25; W26)

PAGE 17: **Facts Can Be Clues**
Facts can be clues to choosing a math operation because they tell how many numbers to work with, and whether the things are alike or different. (W27)

PAGE 18: **Words Can Be Clues**
Words can sometimes be clues to choosing the correct math operation. A fourth hint reminds students to locate

and mark clue words. Use the math word glossary (*Math Language*, page 31) with this lesson. Give students "Math Dictionary" (W11) to help them record and look up new words. (W28; W29)

PAGE 19: **Math Workout**
Students apply their learning from units 1 to 3. (W30)

Enrichment Activities
- Have students play board games that use clue cards.
- Have a scavenger hunt. Hide things around the classroom. Write clues with questions, facts, words, and numbers.
- Think of a mystery word. Have students ask you questions until they guess it. Then ask: *What clues did you use to guess the word? How are they like the clues in word problems?*

Unit 4: Two or More Math Steps

Students learn to recognize and analyze word problems that require more than one math operation. (Unit pre-post test, W31; W9; W10; unit review: W38, W39; W40)

PAGE 20: **Two or More Math Steps**
Help students conclude that math problems in real life usually involve more than one math step.

PAGE 21: **How Many Steps?**
Students use a questioning model to help them decide if a word problem has more than one step. Lead students to conclude that asking that question helps them solve word problems. (W32–W33)

PAGE 22: **The First Step**
Students figure out the order of math steps in a two-step problem. (W34–W35)

PAGE 23: **Label the Steps**
Students write and label the math problem for each step in a two-step word problem. (W36; W37)

PAGE 24: **Math Workout**
Students apply what they learned in unit 4. (W38; W39)

Enrichment Activities
- Bring in or make comic strips that present problem situations. Cut and mix the frames. Have students arrange them in the correct sequence, and justify their solutions.
- Collect cents-off coupons from grocery stores. Then, write grocery lists. Using these, students can "shop" in newspaper grocery ads and figure out a total cost for the items minus the cents off.

Unit 5: Facts from Everywhere

Students learn how to find math facts on visuals such as graphs, charts, and ads. (Unit pre-post test, W41; W9; W10; unit review, W52)

PAGE 25: **Facts from Everywhere**
To introduce the unit, bring in different visuals such as price charts, menus, sale ads, graphs, receipts, and bills. Discuss each kind. Encourage students to think up math problems for them. Post the visuals for students to refer to throughout this unit. (W42–W43)

PAGES 26–27: **Look Around the Page**
Students practice getting facts from a chart and from a graph. (W44; W45–W46)

PAGE 28: **Which One?**
Students examine several charts and choose the correct one for the word problem. (W47–W48)

PAGE 29: **Too Many Facts!**
Students look at facts on a menu and choose the correct ones to solve the word problem. (W49–W51)

PAGE 30: **Math Workout**
Students apply what they've learned. (W52)

Enrichment Activities
- Have students clip charts or graphs from newspapers or magazines. Display them on a bulletin board. Compare and contrast them with questions such as: *What are they about? What do they tell? Do they all involve math?* Have students write word problems about them.
- Bring in menus from local restaurants. Discuss all the information on them. Then have students write word problems about them.

Unit 6: It's Your Turn

Students apply what they learned in this book.

PAGE 31: **It's Your Turn**
Students make up their own one- and two-step word problems. (W53; W54)

Enrichment Activities
- Have students illustrate their original word problems and compile them in a class book.
- Let your low-reading students tape-record their word problems.

UNDERSTANDING WORD PROBLEMS Workbook Answer Key

Unit 1: Math Stories

Page 5 Check Them Out Hard words will vary.
Page 6 What Answer Do You Find? Sentences are at the end of the word problems.
Page 7 A Math Question **1.** How much meat do you need? **2.** How many weeks will it take to save the money? **3.** How many quarts should you buy? **4.** How much time will you spend driving?
Page 8 Your Turn **1.** jeans **2.** how much they cost
Page 9 Math Workout **1.a.** take-home pay **b.** how much your pay is after deductions **2.a.** the amount you owe **b.** how much that amount is after you pay $10

Unit 2: Is That a Fact!

Page 11 Things and Numbers $250 rent for 1 month; 12 months; $3,000 rent for 12 months
Page 12 Try It Out 1. the money Mara spends 2. how much she spends for everything 3. *Facts:* $1.40, cheese; $1.75, milk; They both are things she buys.
Page 13 Your Turn 1. the quarters Nat needs 2. how many quarters he will need in all 3. *Fact:* 4 washing machines; It tells how many machines. *Fact:* 3 quarters; It tells how many quarters each machine needs.
Page 14 Math Workout 1. Hard words will vary. 2. the deliveries you make 3. how many deliveries you still must make 4. *Fact:* 14 deliveries; It's the number of deliveries in all. *Fact:* 8 deliveries; It's the number of deliveries made so far.

Unit 3: Which Operation?

Page 16 Try It Out 1. b 2. subtract 3. The question asks about part of the 25 tickets.
Page 17 Try It Out 1. a 2.a. 25 raffle tickets b. $3 c. different 3. multiply
Page 18 Bonus 1. $50 2. 5 3. 8 4. 136 5. $180
Page 19 Math Workout 1. b 2.a. more than two numbers b. tickets c. alike 3. Words will vary. 4. add

Unit 4: Two or More Math Steps

Page 21 How Many Steps? add 4 hours and 6 hours **Bonus** 10 hours
Page 22 The First Step *Last step:* how many books of stamps they need *First step:* the total number of stamps **Bonus** 23 + 37; 5
Page 23 Label the Steps *Last step:* how many cans she sold *First step:* how many cans she started with *Step 2* 32 cans in all; 5 cans left; answer label: cans she sold **Bonus** 27
Page 24 Math Workout 1. Hard words may vary. 2. how much each person pays 3. how much the total bill is; how many people will share the cost 4. how much the total bill is 5. *Step 1* $5.00 Sam's dinner; $4.90 Elena's dinner; $4.50 John's dinner; $14.40 total bill *Step 2* 3 number of people; answer label: each person pays **Bonus** $4.80

Unit 5: Facts from Everywhere

Page 26 Look Around the Page add all the calories of the foods she ate **Bonus** 305 calories altogether
Page 27 Your Turn 1. how much more than $1,000 they raised 2. how much they raised in all; how much they wanted to raise 3. They wanted to raise $1,000. 4. how much they raised in all; add the numbers **Bonus** $210
Page 28 Which One? Tara; how many hours she works in one week; night; ordering food; the night schedule; the day schedule; chart B, night schedule **Bonus** 24 hours
Page 30 Math Workout 1. how much Marie saves 2. cost of tapes before; cost of tapes now 3. cassette tape, sale price 4. were $7.99; now $6.19 5. subtract **Bonus** $1.80

UNDERSTANDING WORD PROBLEMS WorkMasters Answer Key

Unit 1: Math Stories

W7 Unit 1: Math Stories 1. for each; gets approximately; every year 2.a. About how much does Alex earn yearly? b. Alex's earnings c. how much he earns in a year 3. b; The question asks about a total amount. **Bonus** $42,900
W9 One-Step Problems Actual answers are: 1. $110 2. $40 3. 8 4. $25 5. 7 6. $1.60 7. 9 8. $3.68
W10 More One-Step Problems Actual answers are: 1. 4 2. 24 3. 6 4. $300 5. $200 6. $105 7. 8 8. $4
W12 Ask a Question 1. b 2. d 3. c 4. a **Bonus** 1. $140 2. 13 3. 50 4. 8
W13 What's the Question? Students' wording will vary. **Bonus** 1. $35 2. 3 hours 3. $45 4. 20 minutes 5. 13 hours 6. 550 points

Unit 2: Is That a Fact!

W15 Unit 2: Is That a Fact! 1. gets magazines by mail; in all 2.a. the cost of Hal's magazines b. how much the total cost is 3. *Facts:* $14; $12; They are the prices of the magazines. 4. cost of the sports magazine; cost of the mystery magazine; total cost
W16–W17 What Do You Need to Know? 1. *Facts:* how much gas costs each week; how many riders are in the car pool 2. *Facts:* how much the ticket costs; how much bus fare is; how much the food costs 3. *Facts:* how many pieces of fish there are altogether; how many people will eat dinner 4. *Facts:* how many hours he works in one day; how much money he makes per hour 5. *Facts:* how much cleaning the coat will cost; how much cleaning the sweater will cost 6. *Facts:* how many hours of overtime he worked; how much he earns per hour
W18 What Do the Numbers Stand For? **Bonus** 1. $33.25 total cost 2. 240 miles 3. 5 days left 4. $312.50 total charge 5. $70 total cost
W19 Find the Facts 1. *Facts:* 7 hours; 12 hours; They are the number of hours he worked each week. 2. *Facts:* $24; $30; They are the amounts she pays for exercise classes 3. *Facts:* $20.50; $24.20; $6.00; They are the costs of each bill. **Bonus** 1. 19 2. $54 3. $50.70
W20–W21 Making Sense 1.a. the hours the center is open b. how many hours a day it is open c. 2 p.m. is the time the center opens; 6 p.m. is the time the center closes. 2.a. money in a checking account b. how much money is left after Susan writes a check c. $270 is the amount in her checking account; $100 is the

amount of the check. **3.a.** the hours Vicky worked **b.** how many fewer hours than usual she worked this week **c.** 36 hours is the usual number of hours she works per week; 20 hours is the number of hours she worked this week. **4.a.** Lee's yearly pay **b.** how much of it is left after taxes are deducted **c.** $16,000 is Lee's yearly pay; $3,000 is the amount deducted for taxes. **Bonus** **1.** 4 **2.** $170 **3.** 16 **4.** $13,000

W22 Circle the Right Facts Bonus **1.** $4.75 **2.** 40 **3.** $90.00 **4.** 20

Unit 3: Which Operation?

W24 Unit 3: Which Operation? **1.** all **2.a.** 3 **b.** number of laps **c.** alike **3.a.** altogether **b.** add **c.** It asks for a total amount. **4.** 160

W25 Question Clues Students' wording will vary. **Bonus 1** **1.** 39 **2.** $94 **3.** $10 **4.** 15 **Bonus 2** $2.40

W26 Find the Clue in the Question **1.a.** part of it **b.** subtract because the question asks how much money Carmen has left **2.a.** all the minutes **b.** multiply because the question asks about the total minutes it takes to type the letter **3.a.** all the games **b.** add because the question asks about the total number of games **Bonus** **1.** $8 change **2.** 24 total minutes **3.** 21 total games

W27 Find the Clues in the Facts **1.a.** how many more ounces are in the large box **b.** 2 **c.** alike **d.** subtract **2.a.** number of miles per gallon **b.** 2 **c.** different **d.** divide **3.a.** total cost **b.** 2 **c.** alike **d.** add **Bonus** **1.** 12 **2.** 28 **3.** $30.50

W28 Find the Clues in the Words **1.** b; subtract; His last score was less than his first score. **2.** a; multiply; She pays the same amount for 5 days. **3.** b; divide; Each friend pays the same amount. **4.** a; add; The total credits include the credits for both years. **Bonus** **1.** 23 **2.** $100 **3.** $6 **4.** 17

W29 More Clue Words **1.a.** payment: an amount paid on a bill **b.** balance: the amount that's left *Operation:* − **2.a.** equal: the same amount **b.** payments: money paid on a bill **c.** installment: a payment made regularly for the same amount each time *Operation:* ÷ **3.a.** twice: two times **b.** yearly: every year *Operation:* × **4.a.** weekly: every week **b.** hourly: every hour *Operation:* ÷ **Bonus** **1.** $250 **2.** $152 **3.** $70 **4.** $10

Unit 4: Two or More Math Steps

W31 Unit 4: Two or More Math Steps **1.** Jay's total earnings last week **2.** $80; 18 hours; $4 per hour **3.** per hour; in all **4.** multiply $4 by 18 hours **5.** add $80 and the amount he earned on the other job **6.** *Step 1* $72 *Step 2* $152

W32–W33 Two-Step Problems **1.a.** how much money Vera gets back **b.** how much the pen and magazine cost altogether; how much Vera pays **c.** the total cost of the pen and magazine **d.** add $2 and $3 **2.a.** how many total hours Ramon is in class each week **b.** how many class meetings Ramon has each week; how many hours each class meeting lasts **c.** how many class meetings Ramon has each week **d.** add 2 times and 3 times **3.a.** the number of pounds Carol will be charged for **b.** how many pounds she has in all; how many pounds she can take for free **c.** how many pounds she has in all **d.** add 35 pounds and 40 pounds **4.a.** how much Tod spends in all each week **b.** how much Tod spends each day; how many days a week he works **c.** how much he spends each day **d.** add $2.40 and $3.60 **Bonus** **1.** $5 **2.** 10 **3.** 25 **4.** $30

W34–W35 What's the First Step? **1.a.** how many slices of bread he uses in all **b.** how many sandwiches he makes altogether *Answer:* 28 **2.a.** how much each person pays **b.** how much the total cost is *Answer:* $2.32 **3.a.** how much Lou pays to dry all 4 loads **b.** how much he pays to wash all 4 loads *Answer:* $1.20 **4.a.** how many total points she scores **b.** how many points she scores for 6 baskets *Answer:* 15

W36 Step By Step Bonus **1.** $4,600 **2.** $3.70 **3.** 5 hours

W37 Writing Two-Step Problems **1.** *Step 1* $240 *Step 2* $330 **2.** *Step 1* 52 *Step 2* 13

W40 One-Step and Many-Step Problems Actual answers are: **1.** $24 **2.** 50 **3.** $2.90 **4.** $2.50 **5.** $380 **6.** 14 **7.** 2 large cans **8.** $39

Unit 5: Facts from Everywhere

W41 Unit 5: Facts from Everywhere **1.** the total cost of Roy's meal **2.a.** $2.20 for the chili dog **b.** $.95 for potato salad; $2.50 for a Hawaiian Sundae **3.a.** add **b.** The question asks for the total cost. **4.** $5.65

W42–W43 Facts on a Form **1.** $16,452.81 **2.** $75.23 **3.** $16,528.04 **4.** $15,478.04 **5.** $2,040.12 **6.** $2,110.00

W44 Facts on a Chart **1.** how many more ounces of milk products Ron should plan for his wife **2.** how many ounces she needs each day; how many ounces she's had already today **3.** 32 oz. every day **4.** how many ounces she's had so far today; add **5.** subtract *Step 1* 26 ounces so far *Step 2* 6 ounces left

W45–W46 Math in a Graph **1.a.** how much more Fran earns a year now than when she started **b.** Fran has worked for 4 years. **c.** Her salary after 4 years is $14,050. Her starting salary was $9,600. *Answer:* $4,450 **2.a.** how much Fran will earn after 5 years **b.** She'll earn $2,640 more than she did after 3 years. **c.** Her salary after 3 years was $12,860. *Answer:* $15,500

W47–W48 Which Form? Bonus **1.** $361.90 **2.** *Step 1* $36.65 *Step 2* $163.35 **3.** $40

W49–W51 Looking for the Right Facts **1.** *Step 1* $3.65 *Step 2* $6.35 **2.** $6.00 **3.** $5.00 **4.** *Step 1* $1.50 *Step 2* $3.70 **5.** $1.00 **6.** *Step 1* $5.15 *Step 2* $14.85 **7.** *Step 1* $1.30 *Step 2* $2.55 **8.** *Step 1* $7.60 *Step 2* $3.80

Subject: _____ Name: _____

Period: _____ Date: _____

Unit 1: Math Stories

Read this word problem. Then answer the questions.

Alex is an operating engineer. He works only 39 weeks per year. He averages $1,100 each week. About how much does Alex earn yearly?

1. What do these words mean?

   per _____

   averages _____

   yearly _____

2. Look at the word problem again. Underline the sentence that tells what answer to find.

   a. Write that sentence here.

   _____

   b. What *thing* is that sentence about?

   _____

   c. What must you find out about *that* thing?

   _____

3. Which math problem is the word problem about? Put an **X** above that problem.

   a. _____

   39 weeks ⟌ $1,100 — _____ yearly, each week

   b. _____

   $1,100 each week
   × 39 weeks

   ---- yearly

   Why did you choose that problem?

   _____

   _____

Bonus: Find the answer to the problem.

W7

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Subject: _____ Name: _____

Period: _____ Date: _____

Real-Life Math Problems

Find out what kinds of real-life math problems people do. Talk to your friends, teachers, or family. Give them an example of a real-life math problem, such as *adding up a bill*. Then ask the questions below.

Name of person: _____

1. *How* did you use math today in real life?

_____

2. *Where* did you use it?

_____

Name of person: _____

1. *How* did you use math today in real life?

_____

2. *Where* did you use it?

_____

Name of person: _____

1. *How* did you use math today in real life?

_____

2. *Where* did you use it?

_____

Name of person: _____

1. *How* did you use math today in real life?

_____

2. *Where* did you use it?

_____

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Subject: _____ Name: _____

Period: _____ Date: _____

One-Step Problems

Directions: _____

_____

_____

_____

_____

_____

1. Your gross weekly pay is $135. $25 of it goes for deductions. What is your net pay?

2. Jill wants to buy a $50 coat. The coat is on sale at a discount price of $10 off. What is the sale price of the coat?

3. You're going on a 400 mile car trip. Your car goes about 25 miles per gallon of gas. Figure out how many gallons of gas you'll need.

4. You have a $225 balance in your savings account. You deposit $30. Then you make a $15 withdrawal. Next you make another withdrawal of $10. How much money do you withdraw in all?

5. Sue plans to bake a cake and some brownies. Her cake recipe calls for 3 cups of flour and $\frac{1}{2}$ cup of nuts. Her recipe for brownies calls for 4 cups of flour and $\frac{3}{4}$ cup of nuts. How much flour will she need for everything?

6. Tony buys 3 items for lunch. He buys a ham sandwich for $1.00, a dish of dessert for $.35, and a carton of milk for $.25. Find the total cost of Tony's lunch.

7. Rita is a runner. She and 20 other runners were in a race. She ran 5 miles. It took her 45 minutes. About how many minutes did it take her to run each mile?

8. Paula buys a hair dryer for $16.32. Its regular price is $18.99. She pays with a $20 bill. How much change should she get back?

Note to the teacher: This activity can be used repeatedly to reinforce different concepts. Write new directions each time you use it.

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Subject: _____ Name: _____

Period: _____ Date: _____

More One-Step Problems

Directions: _____

_____

_____

_____

_____

_____

1. Jamie buys car insurance. He will pay $50 for it every 3 months. How many payments will he make in a year? (Hint: How many months are there in a year?)

2. Carl takes a class in drivers training. The class is for 8 weeks. He has 3 hours of training each week. How many hours of drivers training will Carl have altogether?

3. Mel wants to paint his house. He needs 3 gallons of paint for the living room, 2 gallons for the dining room, and 1 gallon for the hall. The paint costs $8 a gallon. Figure out how many gallons of paint Mel needs.

4. Cristie and Susan are getting an apartment. The rent is $600 a month. They will share the rent equally. How much will each person pay?

5. Herb is filing his income tax. He worked for 10 months. His income tax for the year is $1,000. $800 of it was deducted from his paycheck. Find out how much tax is left to pay.

6. Nancy buys 2 new tires at a service station. The station charges her $90 for them. It also charges her another $15 to put the tires on her car. How much does Nancy pay in all?

7. Larry works as a cook. He must make 4 orders of fried eggs. He needs 2 eggs for each order. How many eggs does he need in all?

8. Rhonda earns $64 per week. She works part-time as a teacher's aide in a preschool. She works 16 hours per week. She works 4 days a week. How much does she earn per hour?

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Note to the teacher: This activity can be used repeatedly to reinforce different concepts. Write new directions each time you use it.

Subject: _____ Name: _____

Period: _____ Date: _____

Math Dictionary

Read your word problems carefully. Mark words you don't know, and write them on this page. Then find out what those words mean. Write their meanings below.

	Words	Meanings
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____
11.	_____	_____
12.	_____	_____
13.	_____	_____
14.	_____	_____
15.	_____	_____

Bonus: Find real-life things that have those math words (for example: store ads, bank ads, recipes). Bring them to class. Circle the words on them. With your class, make a display of those things.

Note to the teacher: Use with "One-Step Problems," page W9, "More One-Step Problems," page W10, and "One-Step and Many-Step Problems," page W40.

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Subject: _____ Name: _____

Period: _____ Date: _____

Ask a Question

Finish writing these word problems. Look at the Question Box. Find questions that fit the problems. Write those questions at the end of the problems.

Question Box
a. How much paint does he need altogether?
b. How much money do you now make?
c. How many minutes will she spend on homework?
d. How many miles does he drive in all?

1. You used to earn $125 a week. Then you got a $15 raise.

How _____

_____

$$\begin{array}{rl} \$1\,2\,5 & \text{a week} \\ +\quad 1\,5 & \text{raise} \\ \hline \text{----------} & \text{new pay} \end{array}$$

2. James drives a cab. He drives 8 miles to pick up a person. Then he drives that person for 5 miles.

_____

_____

$$\begin{array}{rl} 8 & \text{miles} \\ +\,5 & \text{miles} \\ \hline \text{------} & \text{miles in all} \end{array}$$

3. Bea's math homework will take about 20 minutes to do. Her science homework will take about 30 minutes.

_____

_____

$$\begin{array}{rl} 2\,0 & \text{minutes for math} \\ +\,3\,0 & \text{minutes for science} \\ \hline \text{--------} & \text{total homework time} \end{array}$$

4. Rick is painting his room. He needs 2 pints of paint for each wall. (The room has 4 walls.)

_____

_____

$$\begin{array}{rl} 2 & \text{pints} \\ \times\,4 & \text{walls} \\ \hline \text{------} & \text{total pints} \end{array}$$

Bonus: 1. Find the answers to the questions.
2. Write some word problems like the ones above. Use the other side of this page. Give the problems to a classmate to do. Check his or her answers.

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Subject: _____ Name: _____

Period: _____ Date: _____

What's the Question?

Finish these word problems. Write questions for them. To help you think of good questions, ask yourself: *What thing is this problem about? What can I find out about that thing?*

1. Linda had $60 in her checking account. Then she wrote a check for $25.

   How _____

2. Mr. Chen must drive to another town. He will leave at 8 o'clock. He will arrive at 11 o'clock.

   _____

3. Stan has a part-time job. He earns $15 a day. Last week Stan missed 3 days of work.

   _____

4. Lamont swims 40 laps every day. He can swim 2 laps a minute.

   _____

5. Rita works different hours on her job. On Tuesday she works 4 hours. On Thursday she works 3 hours. On Friday she works 6 hours.

   _____

6. Rory is playing a video game. She needs 1,000 points to win. She scores 450 points.

   _____

Bonus: Write a math problem for each word problem. Then find the answers to the problem.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 1: Word Problem Check

Read this word problem. Then follow the directions below it.

_____

_____

_____

_____

_____

_____

1. Mark the words you don't know. Write them below.
   Find out what those words mean.

Words	Meanings
_____	_____
_____	_____
_____	_____
_____	_____

2. Draw a line under the sentence that tells what answer to find.

   a. What *thing* is that sentence about?

   _____

   b. What must you find out about that thing?

   _____

3. Write a math problem for that word problem. Find the answer.

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Note to the teacher: Write a word problem at the top of the page, or choose one that the student can copy.

Unit review/***UNDERSTANDING WORD PROBLEMS***, Unit 1, pp. 4–9.

Subject: _____ Name: _____

Period: _____ Date: _____

Unit 2: Is That a Fact!

Read this word problem. Underline the sentence that tells what answer to find. Circle the facts that help you find the answer.

> Hal subscribes to two magazines. He pays $14 per year for a sports magazine. And he pays $12 per year for a mystery magazine. How much does Hal pay altogether?

1. What do these words mean?

   subscribes _____

   altogether _____

2. Look at the sentence that tells what answer to find.

   a. What *thing* is that sentence about?

   _____

   b. What must you find out about that thing?

   _____

3. Which facts help you find the answer? Why?

   a. The fact: _____ because it's _____

   b. The fact: _____ because it's _____

4. This is the math problem for the word problem. Write what each number is for.

   $14 _____

   \+ 12 _____

   $26 _____

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Subject: _____ Name: _____

Period: _____ Date: _____

What Do You Need to Know?

These word problems are missing important facts. What facts do they need? Answer the questions under the problems. (The first is started as an example.)

1. Leroy rides to work in a car pool. He rides with several other workers. He shares the cost of gas with them. How much does Leroy pay a week?

   a. What answer do you find?

   How much Leroy pays every week for gas.

   b. What facts do you need to know?

   How much

   How many

2. Sandy wants to go to the movies. She needs money for her ticket. She also needs money for bus fare and for something to eat. How much money does Sandy need in all?

   a. What answer do you find?

   b. What facts do you need to know?

3. Jimmy is cooking a fish dinner for his family. He gives each person the same amount of fish. How many pieces of fish does each person get?

   a. What answer do you find?

   b. What facts do you need to know?

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Name: _____

What Do You Need to Know?

4. Al takes care of a neighbor's yard. He gets paid by the hour. How much does he make in one day?

   a. What answer do you find?

   _____

   b. What facts do you need to know?

   _____

   _____

5. Rocky takes a coat and sweater to the cleaners to be dry-cleaned. How much will he pay to clean both things?

   a. What answer do you find?

   _____

   b. What facts do you need to know?

   _____

   _____

6. Sly usually earns $275 a week. This week he works overtime. Figure out how much he makes in all this week.

   a. What answer do you find?

   _____

   b. What facts do you need to know?

   _____

   _____

Bonus: Make up your own facts for the problems. On another sheet of paper, write these problems again with those facts.

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Subject: _____ Name: _____

Period: _____ Date: _____

What Do the Numbers Stand For?

Read each word problem. Underline the question in it. Then look at the math problem for it. Label the numbers in the math problem. (The first is done.)

1. Jon is buying clothes. He buys shoes for $22.80 and a hat for $10.45. How much does Jon spend?

$$\begin{array}{r} \$22.80 \\ +\ 10.45 \\ \hline \end{array}$$ shoes / hat

2. Anita's car gets about 30 miles per gallon of gas. She puts 8 gallons of gas in her car. How many miles can Anita drive on that amount of gas?

$$\begin{array}{r} 30 \\ \times\ 8 \\ \hline \end{array}$$

3. Rick's project for his history class is due on May 19. Today is May 14. How many days does Rick have to finish his project?

$$\begin{array}{r} 19 \\ -\ 14 \\ \hline \end{array}$$

4. Mr. and Mrs. Smith have a restaurant. They serve special parties at $12.50 per person. They are serving a birthday party for 25 people. How much will they charge?

$$\begin{array}{r} \$12.50 \\ \times\ \ \ 25 \\ \hline \end{array}$$

5. Fran has 2 children. She takes them to the doctor for a checkup. A checkup for each child costs $35. How much does Fran pay in all?

$$\begin{array}{r} \$35 \\ \times\ \ 2 \\ \hline \end{array}$$

Bonus: Find the answers to the problems. Label your answers.

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Subject: _____ Name: _____

Period: _____ Date: _____

Find the Facts

Underline the question in these problems. Write what the question asks you to find. Then finish the sentences about the facts. First write the fact. Each fact should be made up of a number and a word, or a number and a symbol (example: $12). Then write what that fact is. (The first is started as an example.)

1. Brad worked 7 hours last week. He worked 12 hours this week. How many hours did he work in all?

   a. What does the question ask you to find?

   How many hours he worked this week and last week.

   b. What facts help answer the question? Why?

   The fact: 7 hours because it's the hours he worked last week.

   The fact: _____ because it's _____

2. Pam takes exercise classes. She pays $24 for 8 dance exercise classes. She also pays $30 for 10 stretch classes. How much does she pay in all?

   a. What does the question ask you to find?

   _____

   b. What facts help answer the question? Why?

   The fact: _____ because it's _____

   The fact: _____ because it's _____

3. Your phone bill is $20.50. Your gas and electric bill is $24.20. And your water bill is $6.00. Find the total cost of all the bills.

   a. What does the question ask you to find?

   _____

   b. What facts help answer the question? Why?

   The fact: _____ because it's _____

   The fact: _____ because it's _____

   The fact: _____ because it's _____

Bonus: These are all addition word problems. Write math problems for them. Find their answers.

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Subject: _____ Name: _____

Period: _____ Date: _____

Making Sense

Read these word problems. The facts in each are circled. Underline the question in each problem.

1. Sandy runs a child care center. 50 children come to that center. It opens at (2 p.m.) It closes at (6 p.m.) It is open 5 days a week. How many hours a day is the center open?

   a. What *thing* is the question about?

   _____

   b. What does the question ask about that thing?

   _____

   c. How can the facts help find the answer? (One is done as an example.)

   The fact: 2 p.m. is the time the center opens.

   The fact: _____ is the _____

2. Susan has $500 in her savings account. She has ($270) in her checking account. She writes a check for ($100). What is the new balance of her checking account?

   a. What *thing* is the question about?

   _____

   b. What does the question ask about that thing?

   _____

   c. How can the facts help find the answer?

   The fact: _____ is the _____

   The fact: _____ is the _____

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Name: _____

Making Sense

3. Vicky has a summer job cleaning parks. She's done that for 3 years. She must work (36 hours) a week. This week Vicky worked (20 hours). She cleaned 4 parks. How many less hours did she work?

   a. What *thing* is the question about?

   _____

   b. What does the question ask about that thing?

   _____

   c. How can the facts help find the answer?

   The fact: _____ is the _____

   The fact: _____ is the _____

4. Lee works 40 hours a week. He gets 10 vacation days a year. His yearly pay is (\$16,000). (\$3,000) is deducted for taxes. How much of his pay does Lee keep?

   a. What *thing* is the question about?

   _____ _____

   b. What does the question ask about that thing?

   _____

   c. How can the facts help find the answer?

   The fact: _____ is the _____

   The fact: _____ is the _____

Bonus: 1. These are all subtraction word problems. In the space next to them, write math problems for them. Find their answers.
2. Write more word problems like these. Use the other side of this paper.

W21

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Subject: _____ Name: _____

Period: _____ Date: _____

Circle the Right Facts

Underline the question. Circle the right facts. Then finish writing the math problems. (Be sure to label each number.)

1. Julie and Ray eat in a restaurant. Julie has a turkey sandwich for $3.75. She also has apple juice for $1.00. Ray has fish and chips for $4.99. He has coffee for $.60. How much does Julie's food cost?

$3.75 sandwich
\+ _____ _____
_____ total

2. Liz is doing a science experiment. She needs 100 ml. of water. She also needs 32 g. of salt. She already has 60 ml. of water. How much more water does Liz need?

_____ _____
\- _____ _____
_____ ml. more

3. Harry works in an office. There are 35 people in that office. Harry works 20 hours a week. He makes $4.50 per hour. How much money does Harry make each week?

_____ _____
× _____ _____
_____
_____
_____ weekly earnings

4. Deb puts 8 gallons of gas into her car. That fill-up costs $10.40. She drives 160 miles before her next fill-up. About how many miles can she drive on one gallon of gas?

_____ miles per one gallon
____ ⌐ _____ _____

Bonus: Find the answers to the problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 2: Word Problem Check

Read this word problem. Then follow the directions below it.

_____

_____

_____

_____

_____

_____

1. Mark the words you don't know. Write them below. Find out what those words mean.

Words	Meanings
_____	_____
_____	_____
_____	_____

2. Draw a line under the sentence that tells you what answer to find.
   a. What *thing* is that sentence about?

      _____

   b. What must you find out about that thing?

      _____

3. Circle the right facts. Tell about them.

Fact	Why it helps answer the question
_____	_____
_____	_____
_____	_____
_____	_____

4. On another sheet of paper, write a math problem for the word problem. Be sure to label each number.

Bonus: Find the answer to the word problem.

Note to the teacher: Write a word problem at the top of the page, or choose one that the student can copy.

W23

Unit review/*UNDERSTANDING WORD PROBLEMS*, Unit 2, pp. 10–14.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 3: Which Operation?

Read this word problem. Mark the words you don't know. Find out what they mean.

> Cynthia is on the school swim team. She practices different swim strokes every day. She swims 60 laps of the crawl; 60 laps of the back stroke; and 40 laps of the butterfly. How many laps does she swim altogether?

Words	Meanings
_____	_____
_____	_____
_____	_____

Answer these questions about the problem.

1. Draw a line under the sentence that tells you what answer to find. Will you find an amount for *all*, *part*, or *one* of something?

   _____

2. Circle the facts that help you solve the problem. Each fact should be made up of a number and the name of a thing.
   a. How many *numbers* will you use?

      _____

   b. What *things* are you finding out about?

      _____

   c. Are the things alike or different?

      _____

3. Look at the clue word that's marked in the word problem.
   a. What word is it?

      _____

   b. What math operation is it a clue to?

      _____

   c. Why do you say that?

      _____

      _____

      _____

4. Write the math problem for the word problem. Label the numbers.

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Subject: _____ Name: _____

Period: _____ Date: _____

Question Clues

Finish the word problems about these math problems. Write questions that are clues to the operation for each problem.

1.
```
  1 7   miles
+ 2 2   miles
--------  all the miles
```

Raja has a job driving a truck. One day she drove 17 miles in the morning. She drove 22 miles in the afternoon.

How _____

_____

2.
```
  $1 2 0   amount earned
-   2 6    deductions
----------  part that's left
```

Marco earned $120 on his part-time job. $26 were taken out as tax deductions.

_____

_____

3.
```
    $2   for each hamburger
  × 5    hamburgers
-------  for all the hamburgers
```

Del works in a hamburger place. He must figure the costs of each order he fills. Someone orders 5 hamburgers. Hamburgers cost $2 each.

_____

_____

4.
```
          ------  people in each group
3 groups ⌊ 4 5    people altogether
```

45 people work to help get people to vote. They divide into 3 equal groups.

_____

_____

Bonus: 1. Find the answers to the problems.
2. Write a word problem about this math problem. Be sure to write a question that is a clue to the operation. (Use the other side of this paper.)

```
  $ . 6 0   fare for one bus ride
×       4   people
----------  total cost for all
```

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Subject: _____ Name: _____

Period: _____ Date: _____

Find the Clue in the Question

Underline the question in each word problem. What operation is it a clue to? Write the sign for that operation in the math problem. Then answer the questions under the word problem.

1. Carmen had $20. Then she bought a necklace for $12. How much money does Carmen have left?

   $2 0 amount Carmen had
   1 2 for the necklace
   --------- _____

   a. What amount does the question ask for: all the money Carmen had? Or part of it?

   _____

   b. What operation would you do? Why?

   _____ because _____

2. Ali has to type a 3 page letter. It takes him 8 minutes to type a page. About how many minutes will it take Ali to type the whole letter?

   3 pages
   8 minutes per page
   ------ _____

   a. What amount does the question ask for: all the minutes it takes to type a letter? Or part of those minutes?

   _____

   b. What operation would you do? Why?

   _____ because _____

3. Ann's softball team plays 12 home games. They play 9 out-of-town games. How many games do they play altogether?

   1 2 home games
   9 out-of-town games
   -------- _____

   a. What amount does the question ask for: all the games the team plays? Or some of the games?

   _____

   b. What operation would you do? Why?

   _____ because _____

Bonus: Find the answers to the problems. Label your answers.

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Subject: _____ Name: _____

Period: _____ Date: _____

Find the Clues in the Facts

Underline the question in each word problem. Then circle the facts. What operation are the facts clues to?

1. Rose is buying cereal for her baby. A large box has 30 ounces of cereal. A small box has 18 ounces. How many *more* ounces does the large box have?

   a. What does the question ask you to find?

   _____

   b. How many numbers will you use to find the answer? _____

   c. Are the *things* in the facts alike or different? _____

   d. Which operation would you do? _____

2. Bill fills the tank in his car with 10 gallons of gas. He drives 280 miles on that amount of gas. About how many miles per gallon does Bill get?

   a. What does the question ask you to find?

   _____

   b. How many numbers will you use to find the answer? _____

   c. Are the *things* in the facts alike or different? _____

   d. Which operation would you do? _____

3. George buys tools. He pays $22.00 for a saw and $8.50 for a hammer. How much does George pay for the tools?

   a. What does the question ask you to find?

   _____

   b. How many numbers will you use to find the answer? _____

   c. Are the *things* in the facts alike or different? _____

   d. Which operation would you do? _____

Bonus: On another sheet of paper, write a math problem for each word problem. Find answers to the problems. Label all numbers.

W27

Using the facts as clues/***UNDERSTANDING WORD PROBLEMS***, Unit 3, p. 17.

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Subject: _____ Name: _____

Period: _____ Date: _____

Find the Clues in the Words

Read each word problem. Underline the question. Put a ✔ above words that are clues. (One is done as an example.) Then, choose an operation. Put an **X** above the math problem with the right operation.

1. Greg's first bowling score was 124. His last score was 101. How many points did his score go down?

a.

```
  1 2 4  points
+ 1 0 1  points
```

b.

```
  1 2 4  points
- 1 0 1  points
```

What operation do you choose?

_____

Why? _____

_____

2. Lena rents a car for 5 days. The cost is $20 per day. What is the total amount Lena pays?

a.

```
  $2 0  per day
×    5  days
```

b.

```
  $2 0  per day
-    5  days
```

What operation do you choose?

_____

Why? _____

_____

3. 3 friends rent a video tape and player. It costs $18. They'll split the cost evenly. How much will each friend pay?

a.

```
  $1 8  video
×    3  friends
```

b.

3 friends ⟌ $18 video

What operation do you choose?

_____

Why? _____

_____

4. Ed earned 8 extra credits during his first year of school. He earned 9 extra credits his second year. How many extra credits did Ed earn altogether?

a.

```
  8  credits
+ 9  credits
```

b.

```
  8  credits
× 9  credits
```

What operation do you choose?

_____

Why? _____

_____

Bonus: Find the answers to the right math problems. Do those problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

More Clue Words

The words with check marks are clues. Write the words and find out what they mean. Write their meanings. Then choose an operation for each problem. Show what you choose by writing its math sign in the math sentence.

1. Darlene owed $450 on her charge card. She made a payment of $200. What is her new balance?

   a. _____ means _____

   b. _____ means _____

   $450 ☐ $200 = ...

2. Mr. Rivera buys a truck for $5,472. He will make 36 equal payments on it. How much is each installment?

   a. _____ means _____

   b. _____ means _____

   c. _____ means _____

   $5,472 ☐ 36 = ...

3. Marty has his teeth checked twice every year. A checkup costs $35. How much is Marty's yearly dentist bill?

   a. _____ means _____

   b. _____ means _____

   $35 ☐ 2 = ...

4. Lin earns $400 weekly. He works 40 hours weekly. What is Lin's hourly pay?

   a. _____ means _____

   b. _____ means _____

   $400 ☐ 40 = ...

Bonus: Write a math problem for each word problem. Label the numbers. Then find the answers. Label the answers.

W29

Finding clues in certain words/*UNDERSTANDING WORD PROBLEMS*, Unit 3, p. 18.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 3: Word Problem Check

Read this word problem. Then follow the directions.

_____

_____

_____

_____

_____

1. Mark the words you don't know. Write them below. Find out what they mean.

Words	Meanings
_____	_____
_____	_____
_____	_____

2. Draw a line under the sentence that tells you what answer to find. Is that amount for *all*, *part*, or *one* of something?

_____

3. Circle the facts.

   a. How many *numbers* will you use to solve the problem?

   _____

   b. What *things* are you finding out about?

   _____

   c. Are the things alike or different?

   _____

4. Put a ✔ above clue words. Write the words here.

_____

5. What operation would you do to solve the problem?

_____

Bonus: Write a math problem for the word problem, and find the answer. Label the numbers.

Note to the teacher: Write a word problem at the top of the page or choose one the student can copy.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 4: Two or More Math Steps

Read this two-step word problem. Mark the words you don't know. Find out what they mean.

> Jay holds two part-time jobs. Last week he earned $80 on one of the jobs. He worked for 18 hours on the other job. He earns $4 per hour for that job. How much did Jay earn in all last week?

Words	Meanings
_____	_____
_____	_____
_____	_____

Answer these questions about the problem.

1. Draw a line under the sentence that tells you what to find. What answer must you find?

   _____

   _____

2. Circle the right facts. What are they?

   _____

   _____

   _____

3. Put a ✔ above clue words. What are they?

   _____

   _____

   _____

4. How would you do the *first* step?

   _____

5. How would you do the *last* step?

   _____

   _____

6. Write the two steps of the word problem. Write numbers and operation signs. Write labels for each number.

   Step 1

   _____

   _____

   _____

   Step 2

   _____

   _____

   _____

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Subject: _____ Name: _____

Period: _____ Date: _____

Two-Step Problems

Read these two-step word problems. The facts in them are circled. Underline the question in each problem. Then answer the questions under the problem.

1. Vera buys a (pen for $2) and a (magazine for $3.) She pays ($10). How much change does she get?

   a. What answer must you find?

   _____

   b. What two facts do you need to find the answer? Finish the sentences.

   How much _____

   How much _____

   c. Which fact must you figure out?

   _____

   d. How would you figure out that fact?

   _____

2. Ramon takes (2 night school classes). One class meets (3 times a week). The other class meets (2 times a week). Each class meeting is (2 hours) long. How many hours a week is Ramon in classes?

   a. What answer must you find?

   _____

   b. What two facts do you need to find the answer? Finish the sentences.

   How many _____

   How many _____

   c. Which fact must you figure out?

   _____

   d. How would you figure out that fact?

   _____

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Name: _____

Two-Step Problems

3. Carol is taking a plane trip. She can take (50 pounds of luggage for free). She takes a bag that weighs (35 pounds) and another bag that weighs (40 pounds). How many pounds will she be charged for?

   a. What answer must you find?

   _____

   b. What two facts do you need to find the answer? Finish the sentences.

   How many _____

   How many _____

   c. Which fact must you figure out?

   _____

   d. How would you figure out that fact?

   _____

4. Tod commutes to work and home on buses and trains. He spends ($2.40 a day on bus fares). He also spends ($3.60 on train fares). He works (5 days a week). How much does he spend a week for transportation?

   a. What answer must you find?

   _____

   b. What two facts do you need to find the answer? Finish the sentences.

   How much _____

   How many _____

   c. Which fact must you figure out?

   _____

   d. How would you figure out that fact?

   _____

Bonus: Write the math steps for each problem. Find their answers.

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Subject: _____ Name: _____

Period: _____ Date: _____

What's the First Step?

Read these two-step word problems. Circle the facts. Answer the questions under the word problems. Then write the numbers that belong in the math problems.

1. Mike makes sandwiches. He makes 8 ham sandwiches and 6 cheese sandwiches. He uses 2 slices of bread per sandwich. How many slices of bread does he use in all?

   a. What must you find out in the *last* step?

      How many _____

   b. What must you find out in the *first* step?

      How many _____

Step 1	Step 2
------	------
+ ------	× 2
----------	----------

2. Lon and Pat buy groceries for dinner. They get pork chops for $2.20, potatoes for $1.30, and milk for $1.14. They split the cost evenly. How much does each person pay?

   a. What must you find out in the *last* step?

      How much _____

   b. What must you find out in the *first* step?

      How much _____

Step 1	Step 2
------	---------
------	2 ⌐ --------
+ ------	

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Name: _____

What's the First Step?

3. Lou washes and dries 4 loads of laundry at the laundromat. It costs him $3.60 altogether. He pays 60¢ a load to wash the clothes. How much does he pay altogether to dry them?

Step 1	Step 2
------	$3.60
× ------	− ------
----------	----------

a. What must you find out in the *last* step?

How much _____

b. What must you find out in the *first* step?

How much _____

4. Angela makes 6 baskets in a basketball game. She scores 2 points for each basket. She also scores 3 points in free throws. How many points does she score in all?

Step 1	Step 2
------	------
× ------	+ 3
----------	----------

a. What must you find out in the *last* step?

How many _____

b. What must you find out in the *first* step?

How many _____

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Subject: _____ Name: _____

Period: _____ Date: _____

Step By Step

These word problems have two math steps. Underline the question in each word problem. Circle the facts. Then label the numbers in each step.

1. Mrs. Lira's income tax is $6,600. But she has 2 deductions. She can take off $1,000 for each deduction. How much tax does Mrs. Lira pay?

Step 1

$1,000 _____

× 2 _____

$2,000 _____

Step 2

$6,600 _____

− 2,000 _____

---------- _____

2. Paula and Annette take a taxi. The fare is $6.40. They give the driver a $1.00 tip. They split the cost evenly. How much does each person pay?

Step 1

$6.40 _____

+ 1.00 _____

$7.40 _____

Step 2

--------- _____

2 ⟌ $7.40 _____

3. Cory starts work at 3 o'clock. She finishes at 9 o'clock. She takes a 1 hour break for dinner. How many hours does Cory work?

Step 1

9 _____

− 3 _____

6 _____

Step 2

6 _____

− 1 _____

------ _____

Bonus: Find the answers to the problems. Label your answers.

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Period: _____ Date: _____

Writing Two-Step Problems

Look at the two-step math problems. Read the labels carefully. Guess what's happening at each step. Then write a word problem about each math problem.

1. **Step 1**

40 hours of work
× $ 6 hourly pay
--- weekly pay

Step 2

--- weekly pay
+ 90 overtime pay
--- total weekly

2. **Step 1**

25 students in class A
+ 27 students in class B
--- total students

Step 2

--- students each group
4 groups ⌐ --- total students

Bonus: Fill in the missing numbers in each math step. Then find the answers to each problem.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 4: Word Problem Check

Read this two-step problem. Then follow the directions.

_____

_____

_____

_____

_____

1. Mark the words you don't know. Write them below. Find out what they mean.

Words	Meanings
_____	_____
_____	_____
_____	_____

2. Draw a line under the sentence that tells you what to find. What answer must you find?

_____

3. Circle the right facts. What are they?

_____ _____

_____ _____

4. Put a ✔ above clue words. What are they?

_____

5. How would you do the *first* step?

_____

6. How would you do the *last* step?

_____

Bonus: Write the math for the two steps. Find the answers. Be sure to label all the numbers.

Note to the teacher: Write a word problem at the top of the page, or choose one the student can copy.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 4: More Than Two Steps

This word problem has more than two steps. Read it carefully. Then do this:

- Mark the words you don't know. Find out what they mean.
- Underline the sentence (the question) that tells you what answer to find.
- Circle the right facts.
- Put a ✔ above clue words.

1. How many steps does the problem have?

2. What must you find in each step? Write the math for each step in the space at right.

Step 1: How

Step 2:

Step 3:

Bonus: Find the answers to each step.

Note to the teacher: Write a 2- or 3-step word problem at the top of the page or choose one the student can copy.

W39

Unit review/*UNDERSTANDING WORD PROBLEMS*, Unit 4, pp. 20–24.

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Subject: _____ Name: _____

Period: _____ Date: _____

One-Step and Many-Step Problems

Directions: _____

_____

_____

_____

_____

_____

1. Cheng takes his family to the ball game. He buys 2 adult tickets at $8 each. He also buys 2 children's tickets at $4 each. How much does Cheng spend in all?

2. Maria is putting new tiles on her floors. She needs 160 tiles for the kitchen. She needs 30 tiles for the bathroom. She already has 140 tiles. How many more does she need?

3. Karen works in a post office. A man asks her for 10 letter stamps and 5 postcard stamps. Letter stamps cost 22 cents each, and postcard stamps cost 14 cents. How much should Karen charge the man?

4. Pablo buys a calculator for $9.50. He also buys 4 batteries at $.75 each. He pays with $15.00. How much change should he get?

5. Grace works 40 hours this week at $8 per hour. She also works 5 hours overtime at $12 per hour. How much does Grace make this week?

6. Dan plays a basketball game. He makes 6 baskets, and gets 2 points for each. He also makes 2 free throws, and gets 1 point for each. How many points does Dan score in that game?

7. Lee is buying cans of tomato sauce. He can get 3 small cans at 60 cents each. Or he can get 2 large cans at 75 cents each. Which way is cheaper?

8. Mrs. Jordan rents a car for 2 days. She will pay $12 per day for the car. She must also pay 10 cents for every mile that she drives. She drives 150 miles. How much must she pay in all?

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Note to the teacher: This page can be used repeatedly to reinforce different concepts. Write new directions each time you use it.

Subject: _____ Name: _____

Period: _____ Date: _____

Unit 5: Facts from Everywhere

Use the price list from *Della's Deli and Ice Cream Fountain* to do this problem. Mark the words that you don't know. Find out what they mean.

> Roy eats lunch at Della's Deli and Ice Cream Fountain. He eats a chili dog. It costs $2.20. He also eats a potato salad and a Hawaiian Sundae. How much does Roy pay altogether for his meal?

Words	**Meanings**
_____	_____
_____	_____
_____	_____

Answer these questions about the problem.

1. Underline the sentence that tells you what to find. What answer must you find?

   _____

   _____

2. Circle the right facts.

   a. What fact is in the problem?

   _____

   b. What facts are on the price list?

   _____

   _____

3. Put a ✓ over clue words.

   a. What operation would you do to solve the problem?

   _____

   b. Why do you choose that operation?

   _____

   _____

   _____

4. Write the math problem for the word problem. Label all the numbers.

Note to the teacher: Use the WorkMaster on page W51 with this worksheet.

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Subject: _____ Name: _____

Period: _____ Date: _____

Facts on a Form

Use the income tax form to answer these questions. (Look at the number after each question. It tells what line on the form has the answer.)

1. How much money did Mary earn from her job? (line 1)

   _____

2. Mary earned interest on her savings account. What is the amount? (line 2)

   _____

3. What was Mary's total income that year? (line 3)

   _____

4. Mary doesn't pay tax on all her income. How much does she pay tax on? (line 7)

   _____

5. Some money was taken out of Mary's paychecks for taxes during the year. How much? (line 8)

   _____

6. What is the total tax Mary must pay that year? (line 9)

   _____

7. Write a word problem about Mary's income tax. Use some of the facts you wrote on this page.

   _____

   _____

   _____

   _____

Bonus: Find the answer to your word problem.

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Name: _____

Facts on a Form

Department of the Treasury - Internal Revenue Service

1984 **Form 1040EZ Income Tax Return for Single filers with no dependents** (0)

OMB No. 1545-0675

Name & address

Use the IRS mailing label. If you don't have one, please print:

Mary K. Fell
Print your name above (first, initial, last)

426 Hudson Street
Present home address (number and street)

Chicago, Illinois 60614
City, town, or post office, State, and ZIP code

Please print your numbers like this.

1 2 3 4 5 6 7 8 9 0

Social security number

348 38 7221

		Dollars	Cents
Figure your tax	1 Total wages, salaries, and tips. This should be shown in Box 10 of your W-2 form(s). (Attach your W-2 form(s).) 1	16,452	81
	2 Interest income of $400 or less. If the total is more than $400, you cannot use Form 1040EZ. 2	75	23
Attach Copy B of Form(s) W-2 here	3 Add line 1 and line 2. This is your **adjusted gross income.** 3	16,528	04
	4 Allowable part of your charitable contributions. Complete the worksheet on page 21 of the instruction booklet. Do not enter more than $75. 4	50	00
	5 Subtract line 4 from line 3. 5	16,478	04
	6 Amount of your personal exemption. 6	1,000	00
	7 Subtract line 6 from line 5. This is your **taxable income.** 7	15,478	04
	8 Enter your Federal income tax withheld. This should be shown in Box 9 of your W-2 form(s). 8	2,040	12
	9 Use the **single** column in the tax table on pages 31-36 of the instruction booklet to find the **tax** on your taxable income on line 7. Enter the amount of tax. 9	2,110	00
Refund or amount you owe	10 If line 8 is larger than line 9, subtract line 9 from line 8. Enter the **amount of your refund.** 10		
Attach tax payment here	11 If line 9 is larger than line 8, subtract line 8 from line 9. Enter the **amount you owe.** Attach check or money order for the full amount, payable to "Internal Revenue Service." 11		
Sign your return	**I have read this return. Under penalties of perjury, I declare that to the best of my knowledge and belief, the return is true, correct, and complete.**		

Your signature Date

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Subject: _____ Name: _____

Period: _____ Date: _____

Facts on a Chart

Read this word problem and look at the chart. Then answer the questions. Finish writing the numbers and labels in the math problems. Then do the math.

Ron and his wife are expecting a baby. Ron's wife must eat 32 oz. of milk products every day. Ron is planning a meal for her. So far today she had a milkshake and 1 serving of soup. How many more ounces of milk products should Ron plan for her?

Milk Products

Product	1 Serving
Cheese	6 oz.
Soup made with milk	12 oz.
Pudding	10 oz.
Yogurt	8 oz.
Ice cream	12 oz.
Milkshake	14 oz.
Chocolate milk	10 oz.
Evaporated milk	4 oz.

1. What must you find out? (Look at the question.)

_____

_____

2. What two facts do you need to solve the problem?

_____

_____

3. Which fact is in the word problem? Circle it. Then write it here.

_____

4. Which fact will you figure out from the chart?

_____

Circle the numbers in the chart that you'd use. What operation will you do with those numbers?

_____

5. What operation will you do next to find the answer to the word problem?

_____

Step 1

-------- ounces of soup

_____ -------- _____

-------- _____

Step 2

-------- daily ounces

_____ -------- _____

-------- _____

Bonus: On another sheet of paper, write your own word problem about the chart. Find the answer.

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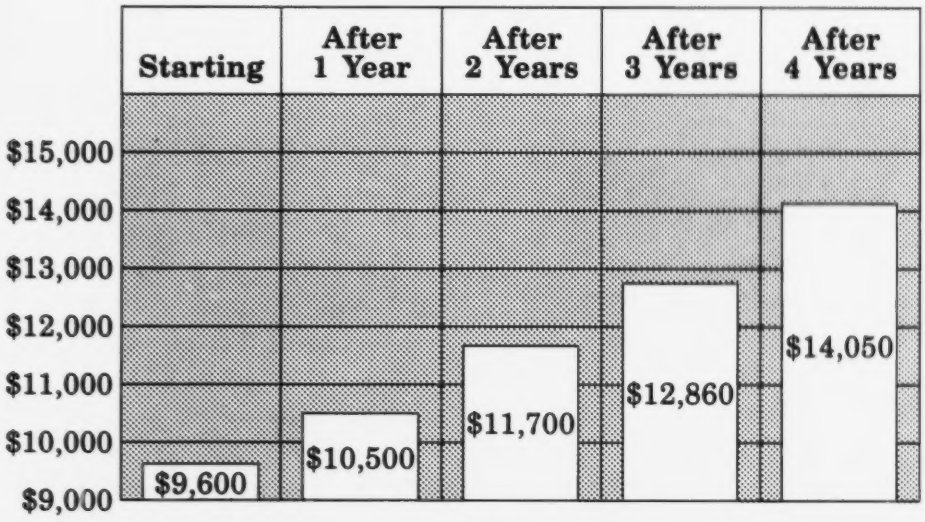
Subject: _____ Name: _____

Period: _____ Date: _____

Math in a Graph

Fran's Yearly Salary



Read each problem. Then finish the math problem for it. If a label for a number is missing, write it.

1. Fran drives a bus. She's been a driver for 4 years. How much more a year does Fran earn *now* than when she *started*?

   a. What does the question ask?

   _____

   b. What facts are in the word problem? Circle them. Then write them here.

   _____

   c. What facts are on the graph? Circle them. Then write them here.

   _____

   $_____$ Fran's salary now

   9,600 _____

   _____ more a year

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Name: _____

Math in a Graph

2. Fran's salary will increase again after 5 years. That increase will be $2,640 more than she earned after 3 years. What will Fran's salary be after 5 years?

   a. What does the question ask?

   _____

   b. What facts are in the word problem? Circle them. Write them here.

   _____

   c. What facts are on the graph? Circle them. Write them here.

   _____

   $---------- _____

   2,640 _____

   ---------- after 5 years

Bonus: Make up another word problem about the graph. Have a classmate find the answer.

_____

_____

_____

_____

_____

_____

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Subject: _____ Name: _____

Period: _____ Date: _____

Which Form?

Find the forms that have facts about these problems. Write the facts.

1. Steve has $400.00 in his checking account. He writes a check to pay his utility bill. How much does Steve have left?

   $_____ old balance

   _____ _____

   _____ _____

2. Coco's checking account balance is $200.00. She just got her account statement. It shows the service charges the bank automatically deducts. Find out how much Coco's balance is now.

   $_____ Christmas Club

   _____ _____ $_____ balance before

   _____ _____ _____ _____

   _____ _____ _____ balance now

3. Coco pays a service charge for her checking account every month. She has had the account for 8 months. How much service charge has Coco paid in all?

   _____ _____

   _____ months

   _____ _____

Bonus: Do the math.

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North State Utility Group

Bill to: Steve Roznik
2122 Lincoln Ave.
Ames, IA 50010

Type of Service	Charge
Gas	$24.18
Electricity	$13.25
Tax	$ .67
Total	$38.10

Century Bank
Fairway Office

February 4, 1985

Coco Montoya
301 Kilkare Rd.
Redwood, OR 94536

Account Number 005597

Automatic Charges

Christmas Club	$25.00
Monthly Service	$ 5.00
Order for New Checks	$ 6.65

Credits	Debits

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Subject: _____ Name: _____

Period: _____ Date: _____

Looking for the Right Facts

Read these word problems. Underline the questions and circle the facts in them. Look at the price list. Circle facts on it. Then, write the numbers that belong in each math problem.

1. James orders a turkey sandwich and a fruit juice. He pays with $10. How much change does he get back?

_____ _____ _____ _____

\+ _____ _____ − _____ _____

_____ total cost _____ change

2. Larry buys himself a Berry Delight. He buys a peppermint ice cream soda for Bob. How much does Larry pay?

_____ _____

\+ _____ _____

_____ total cost

3. Nan and Lucy each order a Hawaiian Sundae. How much do they spend together?

_____ _____

\+ _____ _____

_____ total cost

4. Cass buys a chili dog and 2 scoops of butter pecan ice cream. How much does it cost her?

_____ _____ _____ _____

× _____ _____ + _____ _____

_____ total _____ total cost

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Name: _____

Looking for the Right Facts

5. 3 friends share a Rainbow Sundae. They divide the cost evenly. How much does each friend pay?

_____ each person

___ ⌐ _____ _____

6. Eli buys nachos, a soft drink, and a chicken salad. She pays with a $20 bill. How much change does she get back?

_____ _____

_____ _____

\+ _____ _____

_____ total cost

_____ _____

_____ _____

− _____ _____

_____ change

7. Ted orders 2 scoops of lemon sherbet, 1 scoop of walnut ice cream, and a cup of coffee. How much does he owe?

_____ _____

_____ _____

× _____ _____

_____ total

_____ _____

_____ _____

\+ _____ _____

_____ total cost

8. Arlo and Jim split a roast beef sandwich and a Berry Delight. They share the cost equally. How much does each person pay?

_____ _____

\+ _____ _____

_____ total cost

_____ each person

___ ⌐ _____ _____

Bonus: 1. Find the answers to the problems.
2. Use the price list and make up a word problem of your own.

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Name: _____

Della's Deli and Ice Cream Fountain

Price List

Sandwiches

Roast beef	$3.10
Ham	$2.80
Turkey	$2.80
Salami	$2.50
Cheese	$2.20
Chili dog	$2.20

Salads

Potato	$ .95
Macaroni	$ .95
Tuna	$2.50
Chicken	$2.60
Stuffed tomato	$2.70
Taco salad	$2.70
Nachos	$2.00

Drinks

Soft drinks	$ .55
Milk	$ .45
Fruit juices	$ .85
Coffee	$ .50
Tea or ice tea	$ .50

Fountain Specials

Sherbet—scoop $.65

Lemon	Orange
Lime	Raspberry

Ice Cream—scoop $.75

Chocolate	Butter pecan
Chocolate chip	Peppermint
Rocky road	Strawberry
Coffee	Vanilla
Peach	Walnut

Ice Cream Soda—$1.50
All flavors

Sundaes

Hawaiian Sundae—3 scoops of your choice ice cream with pineapple sauce, whipped cream, and cherries. $2.50

Rainbow Sundae—3 scoops of sherbet or ice cream, 3 sauces of your choice, sprinkles, and whipped cream. $3.00

Berry Delight—4 scoops of ice cream with strawberry, blueberry, and raspberry sauces, whipped cream, nuts. $4.50

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 5: Word Problem Check

Use the _____ to do this problem.

_____

_____

_____

_____

_____

_____

1. Mark the words you don't know. Find out what they mean.

Words	Meanings
_____	_____
_____	_____
_____	_____
_____	_____

2. Underline the sentence (the question) that tells you what to find. What answer must you find?

_____

3. Circle the right facts.

   a. What facts are in the problem?

   _____

   b. What facts are on something else?

   _____

4. Put a ✔ over clue words. What operation would you do to solve the problem?

_____

Bonus: On another sheet of paper, write the math problem for this word problem. Label all the numbers.

Note to the teacher: Write a word problem at the top of the page based on a real-life visual, such as a food store ad. Make copies of the ad and attach it to this page.

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Subject: _____ Name: _____

Period: _____ Date: _____

One-Step Math Story

Write a word problem of your own. Use the facts and questions on this page. Or make up your own facts and questions.

Facts

2 hamburgers	3 hours a day	a discount of $10
3 tacos	4 days each week	a regular price of $49
$2.50 each	$300 weekly pay	a new TV
a chocolate shake	$50 in deductions	put $125 down
a $10 bill	a $75 raise	a sale on clothes

Questions

How much money do I make?
How much money is left?
How many hours do I work altogether?
What is the total cost?
How many dollars do I save?

Word Problem

_____

_____

_____

_____

_____

_____

_____

_____

Bonus: Trade problems with another student. Solve each other's problem.

W53

Writing original word problems/*UNDERSTANDING WORD PROBLEMS*, Unit 6, p. 31.

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Subject: _____ Name: _____

Period: _____ Date: _____

Many-Step Math Story

Read the schedule of summer activities in a park. Make up a word problem about these activities. The problem should have two or more math steps.

Central Park Summer Activities

Get in on the fun!

Swimming Pool

• Season pass	Adults $75	Students $50
• One-day ticket	Adults $ 3	Students $ 1.50
• Teen pool party August 27!		All tickets $ 5

Summer Classes

- Kung Fu
- Dance Exercise
- Drawing and Painting
- Swimming
- Science in the Park

All classes:
$30 for 8 week session
$ 3 for single classes

_____

_____

_____

_____

_____

_____

_____

_____

_____

Bonus: Trade papers with another student. Solve each other's problem.

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USING A CALCULATOR

Workbook by: Gregg Aronson / Susan D. Echaore / Winifred Ho Roderman

WorkMasters™ by: Randy Guerrero / Gene Karas / Susan D. Echaore / Winifred Ho Roderman

Teacher's Guide by: Katherine D. Perez, Ed.D.
Director, Special Education, Saint Mary's College, Moraga, California

Consultant: Phyllis Kaplan, Ph.D.
Department of Educational Psychology, California State University, Hayward, California

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Teacher's Guide **C2–C6**
Teaching Suggestions C2
Workbook Answer Key C5
WorkMasters Answer Key C5

WorkMasters **C8–C55**
Workbook pages for each WorkMaster are listed in parentheses.

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Unit pre-post test C8
Your Calculator *(p. 4)* C9
Keying In *(p. 5)* C10
Spelling with the Calculator *(p. 5)* C11
The Four Operations *(p. 6)* C12
Calculator Sentences *(p. 7)* C13
Calculator Practice *(p. 7)* C14
Unit review: Calculator Check *(pp. 4–7)* C15

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What's the Calculator Sentence? *(pp. 8–11)* C21
Calculator Action *(pp. 8–11)* C22
Unit review: Calculator Check *(pp. 8–12)* C23

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Another ⊞ Check *(p. 14)* C27
⊠ Answer Check *(p. 15)* C28
Another ⊠ Answer Check *(p. 15)* C29
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USING A CALCULATOR Teacher's Guide

by Dr. Katherine D. Perez

OVERVIEW

Using a Calculator is the third workbook in the Janus ***Math in Action: Word Problems*** series. Its function in the series is to provide your special-needs students with a tool for mechanical figuring, thereby freeing them to concentrate on developing the logical thinking skills they need for solving word problems. Students also develop good habits that help to ensure accuracy, right answers, and proper calculator maintenance.

Using a Calculator teaches students how to key in and check basic math operations on a hand-held calculator. Students also learn how to use a calculator to figure problems that involve decimals, mixed numbers, and percents.

OBJECTIVES OF THIS WORKBOOK

Upon completion of this workbook and corresponding WorkMasters, the student will be able to:

- follow a set of procedures to figure basic math operations accurately on a hand-held calculator;
- use certain memory keys to figure math problems with mixed numbers;
- use the percent key to figure common percent problems;
- handle and take care of a calculator;
- apply his learning to everyday situations.

TEACHING SUGGESTIONS

Instructional Aid

Although the calculator is a handy tool for solving word problems, it does not replace math understanding or the need for students to sharpen their own basic computational skills. Students should use the calculator to help them arrive at their answers and check them quickly.

Selecting a Calculator

Your special-needs students do not need a calculator with special features, such as a pi key or a square-root key. An inexpensive model with the basic four functions (addition, subtraction, multiplication, and division), memory keys, and a percent key is suitable for the type of operations covered in this workbook and throughout the series.

When you are selecting a calculator for your students, look for ease of use. Consider the following features:

- large, well-spaced, clearly marked keys that click or offer resistance when pressed so that students know when they have keyed in numbers and operations;
- a display that holds at least eight digits and can be read easily;
- a floating decimal that is positioned in the answer automatically;
- no dual-purpose keys (for example, the clear and clear entry functions should be controlled by separate keys);
- a heavy plastic casing and a long-lasting power source, such as silver-oxide long-life batteries, nickel-cadmium rechargeable batteries with an adapter/charger, or solar batteries.

Know the Calculator

Calculators work in different ways, so experiment with a calculator before you give it to your students. Read its instruction book, learn how it works, find out what problems could arise. Do some random pages from the workbook in advance (particularly from unit 5, "Fractions and the Memory Keys," and unit 6, "The Percent Key") in case you must modify the procedures in the lesson to match the features of the class calculators.

If students use their own calculators, have them bring in their instruction books.

Introducing the Book

Many students have a healthy fear about using a calculator for the first time. Some students may be afraid of breaking it—the body as well as its electronic capabilities. Help students get over their fears by bringing several kinds of calculators to class and demonstrating how each one works. Encourage students to examine and handle the calculators.

Next pass out the class calculators. Again, encourage students to turn them on and play with the keys. To lessen students' fears about breaking the calculators, have them overload the display. Tell them to key in 99,999,999 × 99,999,999. Ask them what the display shows. (The display may flash a number, show an arrow or a letter, or freeze the last number that was keyed in.)

Now distribute *Using a Calculator* and read the introduction to them.

Building Calculator Skills

Help students use the calculator successfully. Make sure they understand the math concepts in a lesson before they start it. Give specific drills that review and reinforce the computational skills they will use.

Guide students through each set of procedures. Move slowly and give many examples. As reinforcement, make flashcards of the steps. Mix the cards and have students tell you the proper sequence.

Increase the students' accuracy on the calculator by giving timed drills. Repeat the drills later so that students can check their progress. Have them keep running records of their scores.

Help students continue developing their analytical skills. When they make an error, use a question-answer pattern to help them find it. As reinforcement, have students write the correct answers next to their wrong answers and explain to you verbally or in writing how they corrected their mistakes.

Positive reinforcement cannot be emphasized enough. Reward students with an Award of Excellence each time they master a set of procedures or even after they successfully complete an obviously difficult activity.

Good Habits

Teach students to check their calculators each day before starting to work with them. Have them turn their calculators on and check the display. Does it light? Can they see the zero and the decimal point? Then have them key in a simple problem to make sure their calculators are working.

Stress the importance of pressing the clear key before keying in a new problem. Be emphatic about turning calculators off at the end of each activity. (For extra credit, students might design a large sign reading TURN OFF YOUR CALCULATOR and post it in a highly visible place.)

TEACHING THE UNITS

This section contains brief descriptions of each workbook page and suggested enrichment activities. Corresponding WorkMasters are listed in parentheses after each page description.

Unit 1: Get to Know Your Calculator

Students are introduced to the basic parts and keys of a hand-held calculator. (Unit pre-post test, C8; unit review, C15)

PAGE 4: **Get to Know Your Calculator**
Students identify the switch, keys, and display on their calculators. (C9)

PAGE 5: **Try It Out**
Students key in numbers and clear the display. Help them reason why they should turn their calculators off after they finish using them. (C10; C11)

PAGE 6: **Operation Keys**
Students locate the operation keys on their calculators. (C12)

PAGE 7: **Calculator Workout**
Students key in large numbers and math problems on their calculators. Until students become competent calculator users, have them first write a math sentence and a calculator sentence before they key in a math problem. (C13; C14; C15)

Enrichment Activities
- Have students discuss how workers in different jobs might use calculators.
- Have students make poster collages of calculator pictures and display them in the classroom.

Unit 2: How to Talk to Your Calculator

Students learn to add, multiply, divide, and subtract on a calculator. (Unit pre-post test, C16; C21; C22; unit review, C23)

PAGE 8: **Telling It to Add**
Students key in addition problems. They find out that they can key in the numbers of an addition operation in any order. (C17)

PAGE 9: **Telling It to Multiply**
Students enter multiplication problems on their calculators and conclude that they can key in the numbers in two ways. Point out to the students that the display doesn't show commas or dollar signs but that they should include them in their written answers. (C18. Note: You may want to develop an answer key for students to use with this WorkMaster by filling in the answers on an extra copy and then laminating it.)

PAGE 10: **Telling It to Divide**
Students key in division problems and conclude that the numbers in a division operation can be entered in only one order. Some special-needs students will need to review division before they begin this lesson. (C19. Note: You may want to develop an answer key for this WorkMaster.)

PAGE 11: **Telling It to Subtract**
Students enter subtraction problems on their calculators and discover that they must always key in these problems in the same order. (C20)

PAGE 12: **Calculator Workout**
Students apply what they learned in this unit. (C23)

Enrichment Activities
- Teach students how to play "Wipeout." One player keys in a six-digit number. The next player then tries to reach zero in the fewest number of moves by adding, subtracting, multiplying, or dividing with a one- or two-digit number. You can adapt this game to any number of players.

- Play "Concentration." Have students match math sentences with calculator sentences, math sentences with math problems, or math problems with calculator sentences.

Unit 3: Check Yourself!

Students learn how to use their calculators to check their answers. Before they begin this unit, discuss with them why they should check their work. Help them conclude that the calculator is just a machine and responds only to the numbers and operations that they key in.

Also in this unit, students learn to use the clear entry key to correct keying errors. Because the clear entry keys on calculators vary, go through the unit in advance and modify the procedures as needed to accommodate the students' calculators. (Unit pre-post test, C24; unit review, C32)

PAGE 13: **Mistake!**
Students use the CE key to clear a wrong number or operation. Help students realize that the CE key is useful because it clears the last entry only, not the entire problem. (C25)

PAGE 14: **How to Check When You Add**
Students check addition problems by keying in the numbers in a different order. The corresponding WorkMaster also teaches students to check two-number addition problems by subtracting. Help students decide which checking procedure they prefer. (C26; C27)

PAGE 15: **How to Check When You Multiply**
Students check multiplication problems by dividing. In the corresponding WorkMaster, students also check multiplication problems by keying in the numbers in a different order. Help students choose the checking procedure that is easier for them. (C28; C29)

PAGE 16: **How to Check When You Subtract**
To check subtraction problems, students add the answer and the number they subtracted. (C30)

PAGE 17: **How to Check When You Divide**
Students check division problems by multiplying the answer and the divisor. (C31)

PAGE 18: **Calculator Workout**
Students apply the checking procedures they learned in this unit. (C32)

Enrichment Activities
- Have the class make big posters showing how to key in and check problems. Then display the posters where students can see them for quick reference.
- Divide the class into pairs of students. Give each pair a calculator and a series of math problems. One student keys in a problem, the other checks it. Have them switch roles after each problem.

Unit 4: Decimals

Students learn how to key in and figure with decimals. Begin this unit by asking students where they have seen or used decimals in real life. Lead them into telling you that monetary amounts are written with decimals. Some special-needs students will need extensive remediation on decimals before they do this unit. (Unit pre-post test, C33; unit review, C37–C38)

PAGE 19: **Keying In Decimals**
Students learn how to key in decimal amounts on their calculators. Some calculators do not display the last zero after the decimal point, so find out what your students' calculators do and modify the lesson accordingly. (C34)

PAGE 20: **Figuring with Decimals**
Students key in money amounts as decimals. Review decimal place value and the different ways in which amounts in cents are written before you begin this lesson. (C34; C35)

PAGE 21: **Reading Decimal Answers**
Students read decimal answers and round them to the nearest hundredth. Help students understand that more digits after the decimal point do not increase the whole number value. (C36)

PAGE 22: **Calculator Workout**
Students apply what they learned. (C37–C38)

Enrichment Activities
- Keep a boxful of store receipts handy. Students can key in the amounts and verify the totals.
- Make fictitious job/salary cards. Students choose a card and use their calculators to work out biweekly, monthly, annual, and other salary rates.

Unit 5: Fractions and the Memory Keys

Students change fractions to decimals and use the memory keys to solve mixed-number problems. Before students begin this unit, discuss the relationship between fractions and decimals as different expressions of the same amount and then review the method for converting fractions to decimals. (Unit pre-post test, C39; unit review, C43–C44. Note: You may want to develop an answer key for the unit review.)

PAGE 23: **Keying In Fractions**
Students convert fractions to decimals. (C40)

PAGE 24: **Keying In Mixed Numbers**
Students practice keying in mixed numbers. (C41. Note: You may want to develop an answer key for this WorkMaster.)

PAGE 25: **Using Memory**
Students use the M+, MR, and MC keys to calculate mixed-number problems. (C42)

PAGE 26: **Calculator Workout**
Students apply their learning. (C43–C44)

Enrichment Activities
- Play "Fraction Memory Bowl." Divide students into teams. Write a mixed-number problem on the board for them to calculate. Any team member can give an answer. The first team that gives the right answer gets a point.
- Teach students to use the memory keys for solving real-life math problems that have more than one step, such as balancing a checkbook or figuring change.

Unit 6: The Percent Key

Students use the percent key to figure common percent problems. (Unit pre-post test, C45; unit review, C55)

PAGE 27: **Finding Percents**
Students use the percent key to find a percentage of an amount. You might want to teach your students another way to find a percent: convert the percent to a decimal and multiply. (C46)

PAGE 28: **How Much Less? How Much More?**
Students add and subtract percentages. Because some calculators require the use of the equals key in addition to the percent key to complete this procedure, you might do this lesson in advance so that you can adjust your teaching to fit your students' calculators. (C47; C48; C49; C52; C53; C54. Note: Although the procedure for checking increased amounts on WorkMaster C54 yields a negative value in the answer check, the absolute value of the answer check and the original number in the problem will match.)

PAGE 29: **What's the Percent? What's the Amount?**
Students find the percentage that a given number is of another number, and they determine a total amount when a percentage of it is given. (C50; C51; C52; C53; C54)

PAGE 30: **Calculator Workout**
Students apply what they learned. (C55)

Enrichment Activities
- Go on a mock shopping spree. Students find items in store ads, then calculate a sale price with a percent-off discount that you give them.
- Have students take a class census by age, sex, hair color, and other criteria. Then have them figure the percentage of students in each category.

PAGE 31: **Calculator Reminders**
"How to Key In Some Operations" lists keying procedures that students learned in this workbook for various kinds of math operations. "Calculator Hints" lists important reminders about using calculators.

USING A CALCULATOR
Workbook Answer Key

NOTE: Math sentence and calculator sentence answers for both the workbook and WorkMasters are not shown in these answer keys. When writing *math sentences*, students should repeat the math problem exactly. For *calculator sentences*, students should then repeat the math sentence, including decimal points but ignoring dollar signs and commas, if any. Although addition and multiplication sentences can be written in any order, division and subtraction sentences must be written in a specific order. That is, the divisor must follow the division sign; the subtrahend must follow the subtraction sign.

Unit 1: Get to Know Your Calculator

Page 4 Your Calculator's Face 1. switch 2. display 3. keys
Page 5 Try It Out 12; 12345678; 0
Page 6 Operation Keys divided by; times; minus; add; equals

Unit 2: How to Talk to Your Calculator

Page 8 Telling It to Add 13
Page 10 Telling It to Divide 1. 4 2. 0.25

Unit 3: Check Yourself!

Page 14 How to Check When You Add 85
Page 15 How to Check When You Multiply 225; 1206
Page 16 How to Check When You Subtract 21; 8303
Page 17 How to Check When You Divide 18; 56
Page 18 Calculator Workout 1. 78 2. 560 3. 34 4. 21

Unit 4: Decimals

Page 19 Keying In Decimals 1. 0.25 2. 1.25 3. 0.05
Page 20 Figuring with Decimals 1. . 2 5 2. C . 0 1 3. C . 0 5 4. C . 0 9 5. C 2 . 4 0 6. C 1 8 0 . 5 0 *Problem* $6.75
Page 22 Calculator Workout 1. $82.91 2. $.54 3. 3.62 4. $350.97

Unit 5: Fractions and the Memory Keys

Page 23 Keying In Fractions 1. 0.4 2. 0.8 3. 0.6 4. 0.2
Page 26 Calculator Workout 1.a. 0.4 b. 0.75 c. .66666666 2.a. 6.8 b. 12.333333 3.A. 28.35 B. 29.28 C. 14.83 D. 4.86

Unit 6: The Percent Key

Page 28 How Much Less? How Much More? $32.50
Page 30 Calculator Workout 1. $120 2. $8.05 3. $420 4. 25% 5. $750

USING A CALCULATOR
WorkMasters Answer Key

Unit 1: Get to Know Your Calculator

C8 Unit 1: Get to Know Your Calculator A. 1. percent 2. multiply 3. equals 4. subtract 5. add 6. divide 7. memory 8. zero 9. nine 10. clear entry 11. clear 12. decimal point

C10 Keying In/Key Strokes 1. 676. 2. 767. 3. 1667. 4. 61776. 5. 16771. 6. 761671. 7. 17167616. 8. 77677176. 9. 10070050. 10. 49273198.

C11 Spelling with the Calculator *Letters:* 1. E 2. h 3. S 4. g 5. L 6. B 7. G 8. O *Numbers:* 1. hi 2. big 3. less 4. bill 5. boss 6. gobble

C14 Calculator Practice A. 1. 17 2. 60 3. 1,064 4. 10,564 5. 10,560 6. 3 7. 9 8. 109 9. 1,475 10. 5,932 11. 516 12. 657 13. 9,975 14. 397,980 15. 4,262,580 16. 24 17. 27 18. 45 19. 24 20. 28,477 B. 1. 12 2. 72 3. 12 4. 46 5. 36 6. 10,092 7. 547 8. 1,644 9. 549,026 10. 62 11. 7,745 12. 8,711 13. 5,564 14. 1,268,202 15. 51,181 16. 70 17. 1,521 18. 71,095 19. 944 20. 76,000

C15 Unit 1: Calculator Check 1.a. The switch turns the power on and off. b. The display shows the numbers that are keyed in and the answer. c. The number keys tell the calculator what numbers to use. d. The operation keys tell the calculator what math operation to do with the numbers. 2.a. 0 1 2 3 4 5 6 7 8 9 b. + − × ÷ c. = d. C 3. 45

Unit 2: How to Talk to Your Calculator

C16 Unit 2: How to Talk to Your Calculator A. 1. 557 2. 607 3. 19,025 4. 8 B. 1. $46 2. $710,400

C17 Adding on the Calculator A. 1. 45 2. 138 3. 600 4. 10,745 5. 1,101,105 6. 8,374 B. 1. 41,398 2. 507,907 3. 8,030 4. $641

C18 Multiplying on the Calculator 1. 225 2. 18,560 3. $18,864 4. $422,955 5. 6,570,214

C19 Dividing on the Calculator 1. 121.29 2. 418 3. 33.3 4. 212.52 5. 48.42 6. 191.57 7. $51

C20 Subtracting on the Calculator 1. 28 2. 19 3. 257 4. 5,857 5. 940 6. 62,320

C21 What's the Calculator Sentence? 1. 70 2. 301 3. 43 4. 479 5. 1,638 6. 11,655 7. 6 8. 648.33

C22 Calculator Action 1. 204 2. 2,621,657 3. 9,603 4. 7.03 5. 638,231 6. 1,008 7. 39,827 8. 2,359,632 9. 9.66 10. 93.4 11. 8 12. 37,724,637 13. 98,471,779

C23 Unit 2: Calculator Check 1. $77.29 2. $23,835 3. 16,002 4. 4,878 5. 19 6. $60 7. $650 8. $51

Unit 3: Check Yourself!

C24 Unit 3: Check Yourself! 1. 45,640 2. 581 3. 3,477 4. 581 5. 4,972 6. 87

C26 ⊞ Answer Check 1. 159 2. 5,454 3. 666 4. 515 5. 88 6. $5,391 7. 15,932

C27 Another ⊞ Check 1. $20 2. 74 3. 166 4. $1,363 5. $8,122 6. 14,767 7. $456,371 8. $97

C28 ⊠ Answer Check 1. 180 2. 1,911 3. 720 4. 3,611 5. 52,947 6. $22,246 7. 9,471,567 8. 420

C29 Another ⊠ Check 1. 96 2. 2,553 3. 195,363 4. 6,445 5. 46,631 6. $632 7. $23,664 8. $35,856

C30 ⊟ Answer Check 1. $412 2. 555 3. $1,398 4. 5,107 5. 8,009 6. 25,515 7. $81,224 8. $56,812

C31 ⊞ Answer Check 1. 10 2. 45 3. $31 4. 15 5. 357 6. 57 7. 23 8. 5

C32 Unit 3: Calculator Check 1. $25 2. 56 3. $160 4. 135

Unit 4: Decimals

C33 Unit 4: Decimals 1.a. $702.66 b. $2.18 c. $.004 2.a. 43.85 b. $16.25 c. $.66 3.a. 580.24 b. $2.59 c. 4.03 4.a. $41.22 b. $.45 c. $274.56 5. $1.20 6. 31.25

C34 Decimal Practice/Just Decimals 1. 0.33 2. 0.50 3. 0.66 4. 9.3 5. 3.89 6. 44.4 7. 893.39 8. 343.08 9. 412.55 10. 2.323 11. 34.389 12. 2.6897 13. 0.093 14. 0.021 15. 0.006 **Money** 1. 0.49 2. 0.81 3. 0.45 4. 0.29 5. 0.63 6. 0.58 7. 1.28 8. 7.85 9. 9.67 10. 42.05 11. 101.06 12. 289.47 13. 1398.88 14. 9555.76 15. 101108.98

C35 How Much? 1. $26.19 2. $43.74 3. $125.65 4. $38.09 5. $7.55 6. $3,322.13 7. $5.00 8. $3.52 9. $7.59

C36 To the Nearest Hundredth/Rounding Decimals 1. 3.44 2. 23.23 3. 189.77 4. 89.88 5. 138.13 6. .28 7. .89 8. .02 9. .33 10. .25 11. .00 12. .99 13. 5.86 14. 34.82 15. 122.64 *Rounding Answers* 1. $170.00 2. $1.37 3. $34.49 4. $223.22 5. $1,921.50 6. $66,000.06 7. $52.24 8. $35.67 9. $13.67 10. $44.23 11. $1,926.50 12. $223.75 13. $3.37

C37–C38 Unit 4: Calculator Check A. 1. $8.27 2. $78.01 3. $6.25 4. $117.68 B. 1. $29.63 2. $4.02 3. $1,236.76 4. 29.15

Unit 5: Fractions and the Memory Keys

C39 Unit 5: Fractions and the Memory Keys 1.a. .5 b. .33 c. .4 d. .75 e. 4.6 f. 27.31 2.a. 1.25 b. .42 c. 1.88 d. .19 e. .93 f. 3.83 g. 221.94 h. $14.10 3. 19.5

C40 Changing Fractions to Decimals 1. .67 2. .33 3. .17 4. .83 5. .14 6. .29 7. .43 8. .57 9. .71 10. .86 11. .13 12. .38 13. .63 14. .22 15. .44 16. .89

C41 Changing Mixed Numbers A. 1. 4.2 2. 10.75 3. 216.6 4. 7.5 B. 1. 9.33 2. 8.4 3. 4.56 4. 17.88 5. 56.4 6. 3.13 7. 506.17 8. 333.6 9. 212.75 10. 300.67 11. 7,784.11 12. 1,296.8

C42 Calculating with the Memory Keys A. 3.85 B. 4.18 C. 27.56 D. 4.05

C43–C44 Unit 5: Calculator Check 1.a. .8 b. .83 c. .89 d. .38 e. .67 f. .29 g. .3 2.a. 9.29 b. 3.07 c. 37.67 d. 89.4 e. 425.83 f. 1,009.56 g. 50,000.15 3.a. 20.08 b. 6.5 c. 8.21 d. $3.17 e. $18.50 f. $700.56 g. $363.30 *Word problems* 1. $4.50 2. .71 feet 3. 34 4. 25

Unit 6: The Percent Key

C45 Unit 6: The Percent Key A. 1. 150 2. 135.7 3. $29.70 4. $188.33 5. 20 6. 120 7. 25 8. $2.77 B. 1. 70% 2. 1,500 3. $5.78 4. $112.50

C46 Calculating Percents **A.** 1. 8 2. 2.39 3. $45.15 4. $57.50 5. $.51 **B.** 1. 12.5 2. $13.07 3. $535.02 4. $17.82 5. $2.17 6. $.01 **C.** 1. $2.66 2. $38.52

C47 Finding Reduced Amounts **B.** 1. 34.44 2. $69.29 3. $54.83 4. $3,094.74 **C.** 1. $51.74 2. $828.74 3. 454.4 4. 7,700 5. 23,698.56 6. 238,500

C48 Finding Increased Amounts **B.** 1. 21 2. $83.70 3. $562.50 4. 50,972.5 **C.** 1. $93.72 2. $24.84 3. $723.24 4. 3,101,085 5. 696,484.4 6. 27,801

C49 Reduced and Increased Amounts 1. $9.74 2. 11.25 grams 3. $16,875 4. 2,244

C50 What's the Percent? **A.** 1. 50 2. 35 3. 53 4. 90 **B.** 1. 20 2. 6 3. 10 4. 5 5. 10 6. 2 **C.** 1. 72% 2. 79%

C51 What's the Amount? **A.** 1. 16 2. 100 3. 16,000 4. $13,000 **B.** 1. 60 2. 992.31 3. $120 4. $29.75 5. $12,138.46 6. $1,994.59 **C.** 1. 432 2. $400 3. 763

C52 Checking Percents **A.** 2 a. 1 b. 8.64 **B.** 20 a. 25 b. 12.5 **C.** 16 a. 40 b. 400

C53 Checking Reduced and Increased Amounts—A **A.** 9 a. 63 b. 32 **B.** 6 a. 84.5 b. 27

C54 Checking Reduced and Increased Amounts—B **A.** 9 a. 63 b. 32 **B.** 6 a. 84.5 b. 27

C55 Unit 6: Calculator Check 1. 50% 2. 7,784 3. $39.89 4. $408.81

Subject: _____ Name: _____

Period: _____ Date: _____

Unit 1: Get to Know Your Calculator

A. These symbols are used on most calculators. What do they mean? Choose a word from the Answer Box and write it where it belongs.

1. [%] _____
2. [×] _____
3. [=] _____
4. [−] _____
5. [+] _____
6. [÷] _____
7. [M+] _____
8. [0] _____
9. [9] _____
10. [CE] _____
11. [C] _____
12. [•] _____

Answer Box	
add	memory
clear	multiply
clear entry	nine
decimal point	percent
divide	subtract
equals	zero

B. How would you key in these math sentences? Write a symbol in each box to show which keys you'd press.

1. 68 + 122 = ☐☐☐☐☐☐☐
2. 101 − 34 = ☐☐☐☐☐☐☐
3. 81 × 325 = ☐☐☐☐☐☐☐
4. $200 ÷ 10 = ☐☐☐☐☐☐☐

Score:

_____ no. right

_____ no. wrong

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Subject: _____ Name: _____

Period: _____ Date: _____

Your Calculator

Get your calculator. Draw what it looks like. Start by drawing its shape. (Hint: Put your calculator on this paper and draw its outline.) Then draw the display. Next, draw the keys and label each key.

1. How do you turn your calculator *on* and *off*?

_____

2. What kind of power does your calculator run on?

_____

3. What are some things you do to take care of your calculator?

_____

_____

Bonus: Look at another calculator. How is that calculator different from yours? How is it alike? Give a demonstration of both calculators to your class.

C9

Get to know your own calculator/***USING A CALCULATOR***, Unit 1, p. 4.

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Subject: _____ Name: _____

Period: _____ Date: _____

Keying In

Key Strokes

Key in these numbers on your calculator. Write what you see on the display. If you make a mistake, key the number in again. Be sure to press **C** before you key in a new number.

☞ **Turn your calculator ON.**

1. 676 _____
2. 767 _____
3. 1,667 _____
4. 61,776 _____
5. 16,771 _____
6. 761,671 _____
7. 17,167,616 _____
8. 77,677,176 _____
9. 10,070,050 _____
10. 49,273,198 _____

☞ **Turn your calculator OFF.**

Your Turn

On the lines below, write numbers that have three or more digits. Then **turn your calculator ON.** Try keying in all those numbers *without* making a single mistake.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

☞ **Turn your calculator OFF.**

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Subject: _____ Name: _____

Period: _____ Date: _____

Spelling with the Calculator

You can make your calculator spell words. Here's how: Key in certain numbers. Then turn your calculator upside down and read the display. The upside-down numbers will look like letters. Try it. Turn your calculator on and press these keys:

[•] [7] [7] [3] [4]

Turn your calculator upside down. Do you see the word *hello*? (Turn your calculator off.)

Find out what letters you can make with the numbers below. Key them in. Then turn your calculator upside down. Write the letter you see on the display. Remember: Press **C** after each number.

☞ **Turn your calculator ON.**

1. 3 _____ 5. 7 _____

2. 4 _____ 6. 8 _____

3. 5 _____ 7. 9 _____

4. 6 _____ 8. 0 _____

Now, key in these numbers on your calculator. Write the words they spell.

1. 14 _____

2. 918 _____

3. 5,537 _____

4. 7,718 _____

5. 5,508 _____

6. 378,806 _____

Bonus: Make up your own words on your calculator. Write the numbers you use and the words they spell.

Numbers	**Words**
_____	_____
_____	_____

☞ **Turn your calculator OFF.**

C11

Keying in numbers and clearing the display/***USING A CALCULATOR***, Unit 1, p. 5.

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The Four Operations

Key in these math sentences. Write the answers you see on the display. Then check your answers. (The right answers are upside down.) If you make a mistake, clear the display. Key in the problem again.

☞ **Turn your calculator ON.**

GROUP A

1. 9+3= _____

   Press [C] and clear the display.

2. 9−3= _____

   Press [C] and clear the display.

3. 9×3= _____

   Press [C] and clear the display.

4. 9÷3= _____

   Press [C] and clear the display.

Answers: 1. 12 2. 6 3. 27 4. 3

GROUP B

1. 8÷4= _____

   Press [C] and clear the display.

2. 8×4= _____

   Press [C] and clear the display.

3. 8−4= _____

   Press [C] and clear the display.

4. 8+4= _____

   Press [C] and clear the display.

Answers: 1. 2 2. 32 3. 4 4. 12

GROUP C

1. 5+8= _____

   Press [C] and clear the display.

2. 9−7= _____

   Press [C] and clear the display.

3. 6÷3= _____

   Press [C] and clear the display.

4. 8×9= _____

   Press [C] and clear the display.

5. 9×9= _____

   Press [C] and clear the display.

6. 4+2= _____

   Press [C] and clear the display.

Answers: 1. 13 2. 2 3. 2 4. 72 5. 81 6. 6

Bonus: Make up some math sentences of your own. Write them here. Then find their answers on your calculator.

☞ **Turn your calculator OFF.**

C12

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Calculator Sentences

Write these math sentences as calculator sentences. (The first is started.)

1. 10+10= 1 □ + □ □ = 20.
2. 10×10= □ □ □ □ □ □ 100.
3. 10−10= □ □ □ □ □ □ 0.
4. 10÷10= □ □ □ □ □ □ 1.
5. 35−5= □ □ □ □ □ 30.
6. 35+5= □ □ □ □ □ 40.
7. 35×5= □ □ □ □ □ 175.
8. 35÷5= □ □ □ □ □ 7.
9. $124÷62= □ □ □ □ □ □ □ 2.
10. 1,204+6,146= □ □ □ □ □ □ □ □ □ 7350.
11. 17,486×62= □ □ □ □ □ □ □ □ 1084132.
12. $3,814−$1,596= □ □ □ □ □ □ □ □ □ 2218.
13. 8,579×28= □ □ □ □ □ □ □ □ 240212.
14. 392÷28= □ □ □ □ □ □ □ 14.
15. 8,579−28= □ □ □ □ □ □ □ □ 8551.
16. 392+28= □ □ □ □ □ □ □ 420.

Bonus:

Turn your calculator ON. Key in your calculator sentences. Write the answer you see on the display. Is it the same as the answer that's written after the calculator sentence? If it isn't, you made a mistake. Clear the display, then key in the problem again. When you have keyed in all the problems correctly, **turn your calculator OFF.**

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Period: _____ Date: _____

Calculator Practice

Key in these problems. Write the answers you get. Remember to clear the display before you key in each new problem.

A. Using Operation Keys

1. 9 + 8 = _____
2. 53 + 7 = _____
3. 319 + 745 = _____
4. 9,338 + 1,226 = _____
5. 5,576 + 4,984 = _____
6. 8 − 5 = _____
7. 17 − 8 = _____
8. 207 − 98 = _____
9. 1,548 − 73 = _____
10. 9,653 − 3,721 = _____
11. 86 × 6 = _____
12. 73 × 9 = _____
13. 95 × 105 = _____
14. 2,010 × 198 = _____
15. 1,990 × 2,142 = _____
16. 72 ÷ 3 = _____
17. 351 ÷ 13 = _____
18. 1,035 ÷ 23 = _____
19. 768 ÷ 32 = _____
20. 142,385 ÷ 5 = _____

Score: _____ no. right _____ no. wrong

B. Mixed Practice

1. 7 + 5 = _____
2. 8 × 9 = _____
3. 72 ÷ 6 = _____
4. 53 − 7 = _____
5. 19 + 17 = _____
6. 348 × 29 = _____
7. 604 − 57 = _____
8. 876 + 768 = _____
9. 1,231 × 446 = _____
10. 558 ÷ 9 = _____
11. 4,273 + 3,472 = _____
12. 8,740 − 29 = _____
13. 2,353,572 ÷ 423 = _____
14. 17,862 × 71 = _____
15. 60,485 − 9,304 = _____
16. $84 − $14 = _____
17. $117 × 13 = _____
18. $69,890 + $1,205 = _____
19. $762,752 ÷ 808 = _____
20. $19,000,000 ÷ 250 = _____

Score: _____ no. right _____ no. wrong

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Period: _____ Date: _____

Unit 1: Calculator Check

Answer these questions about *your* calculator.

1. What are these parts used for?

   a. switch: _____

   _____

   b. display: _____

   _____

   c. number keys: _____

   _____

   d. operation keys: _____

   _____

2. What keys would you press:

   a. to put each number on the display?
   (Show each number, including zero.) ☐☐☐☐☐☐☐☐☐☐

   b. to do each operation? ☐☐☐☐

   c. to get an answer? ☐

   d. to clear the numbers from the display? ☐

3. How would you key in this problem on your calculator?
   Write a calculator sentence for it.

   342
   − 297 ☐☐☐☐☐☐☐☐ _____
   calculator sentence answer

   Now **turn your calculator ON.** Key in that problem on your calculator. Write the answer you get. Then **turn your calculator OFF.**

Score:

_____ no. right

_____ no. wrong

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Unit 2: How to Talk to Your Calculator

A. Write these math problems as math sentences. Then do the problems on your calculator.

1. 129
   75
   + 353

   _____ = _____
   math sentence answer

2. 1,506
   − 899

   _____ = _____
   math sentence answer

3. 761
   × 25

   _____ = _____
   math sentence answer

4. 82 ⟌656

   _____ = _____
   math sentence answer

B. Write math sentences for these word problems. Then do them on your calculator.

1. Darryl buys these things at the flea market: a fishing pole for $12, a jacket for $18, a pair of jeans for $7, and 3 records for $9. How much does Darryl spend in all?

   _____ = _____
   math sentence answer

2. Wang Construction Company will construct a building. The cost to construct it is $64 per square foot. The size of the building is 11,100 square feet. What is the total cost for constructing the building?

   _____ = _____
   math sentence answer

Score:

_____ no. right

_____ no. wrong
(Key in those problems again.)

Reminder: Turn your calculator OFF.

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Period: _____ Date: _____

Adding on the Calculator

A. Key in these math sentences on your calculator. Be sure to clear the display before doing each new problem.

	Answer
1. 2+3+5+5+6+8+9+7=	_____
2. 12+15+18+20+32+41=	_____
3. 101+89+78+43+56+233=	_____
4. 10,292+382+32+8+28+3=	_____
5. 9+99+999+99,999+999,999=	_____
6. 2+24+6+348+7,982+12=	_____

B. Key in these math problems on your calculator. Be sure to clear the display before doing each new problem. Write your answer under each problem.

1.
```
  32,489
+  8,909
```

2.
```
  492,118
+  15,789
```

3.
```
    22
 1,345
 2,343
   888
+3,432
```

4.
```
  $ 67
    39
   185
    77
+ 273
```

Score:

_____ no. right

_____ no. wrong
(Key in those problems again.)

Bonus:
On the back of this paper, write some addition problems of your own. Next to each problem, write a math sentence and a calculator sentence for it. Then find its answer on your calculator.

Reminder: Turn your calculator OFF.

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Multiplying on the Calculator

Write these math problems as math sentences. Then write them as calculator sentences. Find the answers on your calculator and write them here. Check your answers with the answer key.

	Math Sentence	Calculator Sentence	Answer
1. 45 × 5	_____	□□□□□	_____
2. 290 × 64	_____	□□□□□□□	_____
3. $786 × 24	_____	□□□□□□□	_____
4. $1,205 × 351	_____	□□□□□□□□□	_____
5. 67,043 × 98	_____	□□□□□□□□□	_____

Score:

_____ no. right

_____ no. wrong
(Key in those problems again.)

Bonus:
On the back of this page, write more multiplication problems. Write math sentences and calculator sentences for them. Find their answers on your calculator.

Reminder: Turn your calculator OFF.

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Period: _____ Date: _____

Dividing on the Calculator

Write these math problems as math sentences. Then write them as calculator sentences. Find the answers on your calculator and write them here. Check your answers with the answer key.

	Math Sentence	Calculator Sentence	Answer
1. 7 ⟌ 849	_____	□□□□□□	_____
2. 5 ⟌ 2,090	_____	□□□□□□□	_____
3. 23 ⟌ 766	_____	□□□□□□□	_____
4. 31 ⟌ 6,588	_____	□□□□□□□□	_____
5. 101 ⟌ 4,890	_____	□□□□□□□□□	_____
6. 232 ⟌ 44,444	_____	□□□□□□□□□□	_____
7. 15 ⟌ $765	_____	□□□□□□□	_____

Score:

_____ no. right

_____ no. wrong
(Key in those problems again.)

Bonus:
On the back of this page, write more division problems. Write math sentences and calculator sentences for them. Then find their answers on your calculator.

Reminder: Turn your calculator OFF.

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Period: _____ Date: _____

Subtracting on the Calculator

Write these math problems as math sentences. Then write them as calculator sentences. Find the answers on your calculator and write them here.

1. 37
   − 9
   Math sentence: _____
   Calculator sentence: ☐☐☐☐☐ _____ answer

2. 78
   − 59
   Math sentence: _____
   Calculator sentence: ☐☐☐☐☐☐ _____ answer

3. 356
   − 99
   Math sentence: _____
   Calculator sentence: ☐☐☐☐☐☐☐ _____ answer

4. 7,865
   − 2,008
   Math sentence: _____
   Calculator sentence: ☐☐☐☐☐☐☐☐☐ _____ answer

5. $9,773
   − 8,833
   Math sentence: _____
   Calculator sentence: ☐☐☐☐☐☐☐☐☐ _____ answer

6. 76,989
   − 14,669
   Math sentence: _____
   Calculator sentence: ☐☐☐☐☐☐☐☐☐☐☐ _____ answer

Score:

_____ no. right

_____ no. wrong
(Key in those problems again.)

Bonus:
On the back of this page, write more subtraction problems. Write math sentences and calculator sentences for them. Find their answers on your calculator.

Reminder: Turn your calculator OFF.

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Period: _____ Date: _____

What's the Calculator Sentence?

Write these math problems as math sentences. Then write them as calculator sentences. Find the answers on your calculator and write them here.

	Math Sentence	Calculator Sentence	Answer
1. 42 + 28	_____	☐☐☐☐☐☐	_____
2. 222 + 79	_____	☐☐☐☐☐☐☐	_____
3. 91 − 48	_____	☐☐☐☐☐☐	_____
4. 578 − 99	_____	☐☐☐☐☐☐☐	_____
5. 39 × 42	_____	☐☐☐☐☐☐	_____
6. 555 × 21	_____	☐☐☐☐☐☐☐	_____
7. 12 ⟌ 72	_____	☐☐☐☐☐☐	_____
8. 3 ⟌ 1,945	_____	☐☐☐☐☐☐☐	_____

Score:

_____ no. right

_____ no. wrong
(Key in those problems again.)

Bonus:
On the back of this paper, write more math problems using the four operations. Write math sentences and calculator sentences for them. Then find their answers on your calculator.

Reminder: Turn your calculator OFF.

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Mixed practice/*USING A CALCULATOR*, Unit 2, pp. 8–11.

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Subject: _____ Name: _____

Period: _____ Date: _____

Calculator Action

How accurately can you key in these problems on your calculator? Do them as fast as you can and write the answers below. Write the time you start and finish.

Start: _____

1. 8 + 12 + 35 + 34 + 34 + 72 + 9 = _____
2. 10,201 × 257 = _____
3. 12,897 − 3,294 = _____
4. 4,873 ÷ 693 = _____
5. 678,332 − 40,101 = _____
6. 19 + 37 + 372 + 44 + 91 + 378 + 67 = _____
7. 121 + 762 + 876 + 33,333 + 4,098 + 637 = _____
8. 984 × 2,398 = _____
9. 32,829 ÷ 3,397 = _____
10. 145,892 ÷ 1,562 = _____
11. 896 − 888 = _____
12. 38,398,298 − 673,661 = _____
13. 10,497,323 + 87,973,984 + 389 + 78 + 5 = _____

Finish: _____

Score:

_____ no. right

_____ no. wrong
(Key in those problems again.)

Bonus:
Beat your time. See if you can key in these problems accurately in less time.

Reminder: Turn your calculator OFF.

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Practice keying in accurately/***USING A CALCULATOR***, Unit 2, pp. 8–11.

OFF

Subject: _____ Name: _____

Period: _____ Date: _____

Unit 2: Calculator Check

Write math sentences for these problems. Then do them on your calculator.

1. $14\overline{)\$1,082}$

_____ = _____
math sentence answer

2. $\$681 \times 35$

_____ = _____
math sentence answer

3. $161 + 1{,}022 + 14{,}819$

_____ = _____
math sentence answer

4. $5{,}867 - 989$

_____ = _____
math sentence answer

5. Sergeant Roland is retiring from the army. He is 60 years old. He served for 41 years. How old was he when he joined the army?

_____ = _____
math sentence answer

6. Ray buys a TV on sale. He puts down $50. He will pay $480 in 8 equal monthly payments. How much will he pay each month?

_____ = _____
math sentence answer

7. Lila's balance in her checking account is $380. She deposits $270. What is her new balance?

_____ = _____
math sentence answer

8. Kim buys 3 shirts. They each cost $17. How much will she pay in all?

_____ = _____
math sentence answer

Score:

_____ no. right

_____ no. wrong
(Key in those problems again.)

Reminder: Turn your calculator OFF.

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Period: _____ Date: _____

Unit 3: Check Yourself!

Do these problems on your calculator and write their answers. Next, write the math sentence you'd key in to check each answer. Then check the answers.

1. 2,282 × 20 = _____ answer

   _____ = _____
   math sentence check answer check

2. 3,486 ÷ 6 = _____ answer

   _____ = _____
   math sentence check answer check

3. 14,859 − 11,382 = _____ answer

   _____ = _____
   math sentence check answer check

4. 351 + 37 + 193 = _____ answer

   _____ = _____
   math sentence check answer check

5. 1,489 + 3,483 = _____ answer

   _____ = _____
   math sentence check answer check

6. Mrs. Chavez has 165 students. She gave them a math test. So far, she has checked 78 test papers. How many more test papers will she check?

   165 − 78 = _____ answer

   _____ = _____
   math sentence check answer check

Score:

_____ no. right

_____ no. wrong
(Key in those problems again.)

Reminder: Turn your calculator OFF.

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Correcting Mistakes with the CE Key

A. Key in these problems, but press a wrong *number*. Press the **CE** key and correct that number. Write the answer you get. Then check your answer. If you used the **CE** key correctly, you'll get the right answer. (Right answers are upside down.)

1. 43×6

2. 703×98

3. $871 \div 67$

4. $266 - 129$

5. $13 + 51 + 57$

6. $1{,}145 + 221 + 41$

7. $7{,}801 + 96 + 479$

8. $6{,}013 + 4{,}260 + 2{,}302$

Answers: 5. 121 6. 1407 7. 8376 8. 12575
1. 258 2. 68894 3. 13 4. 137

B. Key in these problems, but press the wrong *operation*. Press the **CE** key and correct that operation. Write the answer you get. Check your answer.

1. 521×73

2. $4{,}620 - 1{,}739$

3. $567 \div 81$

4. $2{,}132 + 200 + 4{,}620$

Answers: 1. 38033 2. 2881 3. 7 4. 6952

Bonus: Practice using the **CE** key with other problems. Key in wrong numbers. Key in wrong operations.

Reminder: Turn your calculator OFF.

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Period: _____ Date: _____

⊞ Answer Check

To check these addition problems, you'd key them in again in a different order. First, rewrite all the problems to show that order. Then, find the answer to each problem and check it on your calculator. If an answer and answer check don't match, key in the problem again until they do.

1. 101
+ 58

_____ answer

_____ answer check

2. 3,065
+ 2,389

_____ answer

_____ answer check

3. 249
65
+ 352

_____ answer

_____ answer check

4. 77
78
79
+ 281

_____ answer

_____ answer check

5. 12
10
32
15
11
+ 8

_____ answer

_____ answer check

6. $1,252
678
+ 3,461

_____ answer

_____ answer check

7. 10,056
821
1,493
+ 3,562

_____ answer

_____ answer check

Bonus:
On another sheet of paper, write more addition problems. (You might get them from other math books.) Do them on your calculator. Then check your answers. If you make a mistake, key in the problem again.

Reminder: Turn your calculator OFF.

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Subject: _____ Name: _____

Period: _____ Date: _____

Another [+] Check

Here's another way to check addition problems. (This only works when you add two numbers.) Subtract *one* of the numbers in the problem from the *answer*. You should get the other number. (For an example, look at the first problem below.)

Now do these problems on your calculator. Check your answer by subtracting one of the numbers from the answer. Write the number you press to check an answer. If your answer doesn't check out, key in the problem again.

1. \$12 [+] \$8 [=] \$20 (answer) [−] 8 (number) [=] \$12 (answer check)

2. 49 [+] 25 [=] _____ (answer) [−] _____ (number) [=] _____ (answer check)

3. 129 [+] 37 [=] _____ (answer) [−] _____ (number) [=] _____ (answer check)

4. \$467 [+] \$896 [=] _____ (answer) [−] _____ (number) [=] _____ (answer check)

5. \$2,353 [+] \$5,769 [=] _____ (answer) [−] _____ (number) [=] _____ (answer check)

6. 13,894 [+] 873 [=] _____ (answer) [−] _____ (number) [=] _____ (answer check)

7. \$103,483 [+] \$352,888 [=] _____ (answer) [−] _____ (number) [=] _____ (answer check)

8. Write a math sentence for this word problem. Find the answer and check your answer.

   Bob borrowed money from Helen. Last month, he paid her \$45. This month, he paid her the rest of the money: \$52. How much money did Bob borrow altogether?

   _____ (math sentence) [=] _____ (answer) [−] _____ (number) [=] _____ (answer check)

Bonus: On another sheet of paper, make up addition problems. Give the problems to a classmate to do and check.

Reminder: Turn your calculator OFF.

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Subject: _____ Name: _____

Period: _____ Date: _____

⊠ Answer Check

To check these multiplication problems, you'd divide your answer by one of the numbers in a problem. You should get the other number. Find the answers to these problems on your calculator. Check them. Write the number you press to check each answer. If your answer doesn't divide out, key in the problem again.

1. 12 ⊠ 15 = _____ (answer) ÷ _____ (number) = _____ (answer check)

2. 49 ⊠ 39 = _____ (answer) ÷ _____ (number) = _____ (answer check)

3. 72 ⊠ 10 = _____ (answer) ÷ _____ (number) = _____ (answer check)

4. 157 ⊠ 23 = _____ (answer) ÷ _____ (number) = _____ (answer check)

5. 333 ⊠ 159 = _____ (answer) ÷ _____ (number) = _____ (answer check)

6. $1,589 ⊠ 14 = _____ (answer) ÷ _____ (number) = _____ (answer check)

7. 10,489 ⊠ 903 = _____ (answer) ÷ _____ (number) = _____ (answer check)

8. Write a math sentence for this word problem. Find the answer and check that answer.

   Paul delivers mail. He covers 28 blocks every day. There are 15 buildings on each block. How many buildings does he deliver mail to?

   _____ (math sentence) = _____ (answer) ÷ _____ (number) = _____ (answer check)

Bonus:
Find multiplication problems in another math book. Do the problems on your calculator. Check your answers.

Reminder: Turn your calculator OFF.

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Subject: _____ Name: _____

Period: _____ Date: _____

Another ⊠ Check

You can also check answers to multiplication problems this way: key in the numbers of a problem in a different order. You should get the same answer. (For an example, look at the first problem.)

Rewrite all these problems to show how you'd key them in to check them. Then do them and check your answers on your calculator. If an answer and answer check don't match, key in the problem again until they do.

1. 12 × 8 = 96 answer

   8 × 12 = 96 answer check

2. 111 × 23 = _____ answer

   _____ × _____ = _____ answer check

3. 3,987 × 49 = _____ answer

   _____ × _____ = _____ answer check

4. 1,289 × 5 = _____ answer

   _____ × _____ = _____ answer check

5. 3,587 × 13 = _____ answer

   _____ × _____ = _____ answer check

6. $79 × 8 = _____ answer

   _____ × _____ = _____ answer check

7. $986 × 24 = _____ answer

   _____ × _____ = _____ answer check

8. $3,984 × 9 = _____ answer

   _____ × _____ = _____ answer check

Bonus: Practice checking multiplication problems that way. Find problems in another math book. Find their answers and check them on your calculator.

Reminder: Turn your calculator OFF.

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Subject: _____ Name: _____

Period: _____ Date: _____

[−] Answer Check

To check these subtraction problems, add the answer and the number you subtract. You should get the number you subtracted from. Find the answers to these problems on your calculator. Check them. Write the number you press to check a problem. If your answer doesn't check out, key in the problem again until it does.

1. \$451 [−] \$39 [=] _____ [+] 39 [=] _____
   answer number answer check

2. 789 [−] 234 [=] _____ [+] _____ [=] _____
   answer number answer check

3. \$2,076 [−] \$678 [=] _____ [+] _____ [=] _____
   answer number answer check

4. 8,661 [−] 3,554 [=] _____ [+] _____ [=] _____
   answer number answer check

5. 12,400 [−] 4,391 [=] _____ [+] _____ [=] _____
   answer number answer check

6. 39,518 [−] 14,003 [=] _____ [+] _____ [=] _____
   answer number answer check

7. \$415,098 [−] \$333,874 [=] _____ [+] _____ [=] _____
   answer number answer check

8. Write a math sentence for this word problem. Find the answer and check that answer.

   The Lees bought their house for \$89,680. So far they have paid off \$32,868. How much more do the Lees have to pay?

   _____ [=] _____ [+] _____ [=] _____
   math sentence answer number answer check

Bonus:
Find subtraction problems in another math book. Do the problems on your calculator. Check the answers.

Reminder: Turn your calculator OFF.

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÷ Answer Check

To check these division problems, multiply the answer by the divisor. You should get the number you divided. Find the answers to these problems on your calculator. Check them. Write the number you press to check a problem. If an answer doesn't check out, key in the problem again until it does.

1. 180 ÷ 18 = _____ (answer) × 18 (number) = _____ (answer check)

2. 540 ÷ 12 = _____ (answer) × _____ (number) = _____ (answer check)

3. $1,612 ÷ 52 = _____ (answer) × _____ (number) = _____ (answer check)

4. 345 ÷ 23 = _____ (answer) × _____ (number) = _____ (answer check)

5. 15,708 ÷ 44 = _____ (answer) × _____ (number) = _____ (answer check)

6. 16,017 ÷ 281 = _____ (answer) × _____ (number) = _____ (answer check)

7. 24,173 ÷ 1,051 = _____ (answer) × _____ (number) = _____ (answer check)

8. Write a math sentence for this word problem. Find the answer and check it.

   Jerry travels 250 miles. He averages 50 miles per hour. How many hours does it take Jerry to drive the whole trip?

   _____ (math sentence) = _____ (answer) × _____ (number) = _____ (answer check)

Bonus:
Find division problems in another math book. Do the problems on your calculator. Check the answers.

Reminder: Turn your calculator OFF.

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Unit 3: Calculator Check

Write math sentences for these word problems. Write the operation key and numbers you'd press to check the answers. Then do the problems on your calculator and check your answers.

1. Audree pays $175 for rent. She gives her landlady $200. How much does Audree get back?

_____ − _____ = _____ ☐ _____ = _____

math sentence | answer | number | answer check

2. The El Win Company has 3 work shifts. It has 168 workers. An equal number of workers are on each shift. How many workers per shift are there?

_____ ÷ _____ = _____ ☐ _____ = _____

math sentence | answer | number | answer check

3. Leon works 32 hours per week. He earns $5 per hour. How much money does Leon earn a week?

_____ × _____ = _____ ☐ _____ = _____

math sentence | answer | number | answer check

4. Ms. Rose teaches 5 classes of history. She has 32 students in her first period class; 28 students in her second class; 31 students in her third class; 29 students in her fourth class; and 15 students in her last class. How many students does she teach altogether?

_____ + _____ + _____ + _____ = _____

math sentence | answer

_____ + _____ + _____ + _____ = _____

math sentence check | answer check

Reminder: Turn your calculator OFF.

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Unit 4: Decimals

Do these problems on your calculator. If you need to, round your answers to the nearest hundredth.

1. a. $67.89 × 10.35

   b. 87¢ × 2.5

   c. $1.48 × .003 =

2. a. 4.5 ⟌197.34

   b. 40 ⟌$650

   c. $22.44 ÷ 34 =

3. a. 83.44
   295.05
   77.21
   9.66
   + 114.88

   b. 25¢ + 68¢ + 72¢ + 12¢ + 49¢ + 33¢ =

   c. .06 + .19 + .53 + .78 + .91 + 1.56 =

4. a. $50.00 − 8.78

   b. 92¢ − 47¢

   c. $342.89 − $68.33 =

5. Rhonda buys 12.7 gallons of gas. She pays a total of $15.23. How much does she pay for one gallon of gas? (Hint: divide.)

   _____ answer

6. Jean goes on a diet. She loses about 1.25 pounds a week. About how many pounds will she lose altogether in 25 weeks? (Hint: multiply.)

   _____ answer

Score:

_____ no. right

_____ no. wrong

Reminder: Turn your calculator OFF.

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Decimal Practice

Just Decimals

Practice keying in these decimals on your calculator. Write what you see on the display. Be sure to show the decimal point. If you make a mistake, key in the number again.

1. .33 _____
2. .50 _____
3. .66 _____
4. 9.3 _____
5. 3.89 _____
6. 44.4 _____
7. 893.39 _____
8. 343.08 _____
9. 412.55 _____
10. 2.323 _____
11. 34.389 _____
12. 2.6897 _____
13. .093 _____
14. .021 _____
15. .006 _____
16. Write decimals of your own. Practice keying them in.

_____

_____

_____

_____

Money

Practice keying in these amounts on your calculator. Write what you see on the display. Be sure to show the decimal point. If you make a mistake, key in the amount again.

1. 49¢ _____
2. 81¢ _____
3. 45¢ _____
4. $.29 _____
5. $.63 _____
6. $.58 _____
7. $1.28 _____
8. $7.85 _____
9. $9.67 _____
10. $42.05 _____
11. $101.06 _____
12. $289.47 _____
13. $1,398.88 _____
14. $9,555.76 _____
15. $101,108.98 _____
16. Write money amounts of your own. Practice keying them in.

_____

_____

_____

_____

Reminder: Turn your calculator OFF.

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How Much?

Do these problems on your calculator. Then write a math sentence to show how you'd check each of them. Next, check their answers on the calculator.

1. $3.89 + $22.30 = _____ answer

_____ = _____
math sentence check answer check

2. $14.85 + $28.89 = _____ answer

_____ = _____
math sentence check answer check

3. $158.89 − $33.24 = _____ answer

_____ = _____
math sentence check answer check

4. $239.98 − $201.89 = _____ answer

_____ = _____
math sentence check answer check

5. $17.15 × $.44 = _____ answer

_____ = _____
math sentence check answer check

6. $257.33 × $12.91 = _____ answer

_____ = _____
math sentence check answer check

7. $50.00 ÷ $10.00 = _____ answer

_____ = _____
math sentence check answer check

8. $1,208.35 ÷ $343.15 = _____ answer

_____ = _____
math sentence check answer check

9. Write a math sentence for this word problem. Then write a math sentence to show how you'd check it. Do the problem on your calculator. Check your answer.

Vern bought these things at a grocery store: 5 pounds of oranges for $3.47; a loaf of bread for $.89; a can of tuna for $1.19; a small bottle of mustard for $.65; and a bag of potato chips for $1.39. How much did Vern pay altogether?

math sentence _____ = _____ answer

math sentence check _____ = _____ answer check

Reminder: Turn your calculator OFF.

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Period: _____ Date: _____

To the Nearest Hundredth

Rounding Decimals

Round these decimals to the nearest hundredth.

1. 3.444 → _____
2. 23.226 → _____
3. 189.772 → _____
4. 89.8817 → _____
5. 138.125 → _____
6. .281 → _____
7. .8944 → _____
8. .016 → _____
9. .332 → _____
10. .2456 → _____
11. .0018 → _____
12. .991 → _____
13. 5.862 → _____
14. 34.8217 → _____
15. 122.6351 → _____

Score:

_____ no. right

_____ no. wrong

Write the correct answer next to each wrong answer.

Rounding Answers

Do these problems on your calculator. Write the answers. If an answer has more than three digits after the decimal point, round it to the nearest hundredth.

1. $42.50 × 4 = _____
2. $32.84 ÷ 24 = _____
3. $482.90 ÷ 14 = _____
4. $892.89 × .25 = _____
5. $1,098 × 1.75 = _____
6. $330,000.32 ÷ 5 = _____
7. $3.37 × 15.5 = _____
8. $107 ÷ 3 = _____
9. $123 ÷ 9 = _____
10. $11,500 ÷ 260 = _____
11. $3,853 × .50 = _____
12. $2,685 ÷ 12 = _____
13. $7,000 ÷ 2,080 = _____

Score:

_____ no. right

_____ no. wrong

Write the correct answer next to each wrong answer.

Reminder: Turn your calculator OFF.

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Unit 4: Calculator Check

A. Write math sentences for these problems. Then do them on your calculator. Next write math sentences that show how you'd check your answers. Then check those answers on the calculator. (If you need to, round your answers to the nearest hundredth.)

1. $22.35
   × .37

   _____ (math sentence) = _____ (answer) _____ (nearest hundredth)

   _____ (math sentence check) = _____ (answer check) _____ (nearest hundredth)

2. $115.89
   − 37.88

   _____ (math sentence) = _____ (answer)

   _____ (math sentence check) = _____ (answer check)

3. 2,080 ⟌ $13,000

   _____ (math sentence) = _____ (answer)

   _____ (math sentence check) = _____ (answer check)

4. $68.80
   .97
   46.02
   \+ 1.89

   _____ (math sentence) = _____ (answer)

   _____ (math sentence check) = _____ (answer check)

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Name: _____

Unit 4: Calculator Check

B. Write a math sentence for each word problem. Then key in the problem. Next, write a math sentence to show how you'd check your answer. Then check it on your calculator. (Round your answers to the nearest hundredth.)

1. Lem rents a tuxedo for the senior dance. The fee is $25.75. He must also pay a $3.88 sales tax. Find the total cost for renting the tuxedo.

_____ + _____ = _____
math sentence answer

_____ = _____
math sentence check answer check

2. Gina gives a grocery clerk $25.55. Her bill is $21.53. How much change does Gina get back?

_____ − _____ = _____
math sentence answer

_____ = _____
math sentence check answer check

3. Kobi works a total of 179.50 hours this month. She earns $6.89 per hour. How much does she earn this month?

_____ × _____ = _____ _____
math sentence answer nearest hundredth

_____ = _____ _____
math sentence check answer check nearest hundredth

4. Rocky drives 335.2 miles before filling his car with gas. He fills the gas tank with 11.5 gallons of gas. How many miles per gallon does Rocky get on his car?

_____ ÷ _____ = _____ _____
math sentence answer nearest hundredth

_____ = _____ _____
math sentence check answer check nearest hundredth

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 5: Fractions and the Memory Keys

Do these problems on your calculator. If you need to, round your answers to the nearest hundredth.

1. Change these fractions to decimals.

a. $\frac{1}{2}$ = _____ c. $\frac{2}{5}$ = _____ e. $4\frac{3}{5}$ = _____

b. $\frac{1}{3}$ = _____ d. $\frac{3}{4}$ = _____ f. $27\frac{4}{13}$ = _____

2. Find the answers to these math problems.

a. $\frac{1}{2}+\frac{3}{4}=$ _____ e. $1\frac{1}{2}-\frac{4}{7}=$ _____

b. $\frac{2}{3}-\frac{1}{4}=$ _____ f. $2\frac{3}{7}+1\frac{2}{5}=$ _____

c. $\frac{3}{4}\div\frac{2}{5}=$ _____ g. $14\frac{1}{6}\times 15\frac{2}{3}=$ _____

d. $\frac{3}{8}\times\frac{1}{2}=$ _____ h. $\$10.25\div 2\frac{1}{2}=$ _____

3. Finish writing a math sentence for this word problem. Then find the answer on your calculator.

Ralph is a runner. He trains 6 days a week. He runs $3\frac{1}{4}$ miles on each of those days. How many miles does he run altogether during the week?

_____ X _____ = _____

math sentence answer

Score:

_____ no. right

_____ no. wrong

Reminder: Turn your calculator OFF.

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Period: _____ Date: _____

Changing Fractions to Decimals

Write math sentences to show how you'd change these fractions to decimals on your calculator. Then key in the fractions. (If you can't remember how to key in fractions, look at page 23 of your *Using a Calculator* workbook.) Write what you see on the display. Drop the zero before the decimal, and round to the nearest hundredth. (The first is done.)

	Math Sentence		Display		Decimal
1. $\frac{2}{3}$ =	2 ÷ 3	=	.66666666	=	.67
2. $\frac{1}{3}$ =		=		=	
3. $\frac{1}{6}$ =		=		=	
4. $\frac{5}{6}$ =		=		=	
5. $\frac{1}{7}$ =		=		=	
6. $\frac{2}{7}$ =		=		=	
7. $\frac{3}{7}$ =		=		=	
8. $\frac{4}{7}$ =		=		=	
9. $\frac{5}{7}$ =		=		=	
10. $\frac{6}{7}$ =		=		=	
11. $\frac{1}{8}$ =		=		=	
12. $\frac{3}{8}$ =		=		=	
13. $\frac{5}{8}$ =		=		=	
14. $\frac{2}{9}$ =		=		=	
15. $\frac{4}{9}$ =		=		=	
16. $\frac{8}{9}$ =		=		=	

Score:

_____ no. right

_____ no. wrong
(Key in those problems again.)

Reminder: Turn your calculator OFF.

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Changing Mixed Numbers

A. Write the keys you'd press to change these mixed numbers to mixed decimals. Then press those keys and write your answer. (The first is started.) Check your answers with the answer key.

1. $4\frac{1}{5}$ = [1] [÷] [5] [+] [4] [=] _____
2. $10\frac{3}{4}$ = ☐☐☐☐☐☐☐ _____
3. $216\frac{3}{5}$ = ☐☐☐☐☐☐☐☐ _____
4. $7\frac{1}{2}$ = ☐☐☐☐☐☐ _____

B. Change these mixed numbers to mixed decimals. Round your answers to the nearest hundredth.

1. $9\frac{1}{3}$ = _____
2. $8\frac{2}{5}$ = _____
3. $4\frac{5}{9}$ = _____
4. $17\frac{7}{8}$ = _____
5. $56\frac{2}{5}$ = _____
6. $3\frac{1}{8}$ = _____
7. $506\frac{1}{6}$ = _____
8. $333\frac{3}{5}$ = _____
9. $212\frac{3}{4}$ = _____
10. $300\frac{2}{3}$ = _____
11. $7{,}784\frac{1}{9}$ = _____
12. $1{,}296\frac{4}{5}$ = _____

Score:

_____ no. right

_____ no. wrong

(Key in those problems again.)

Reminder: Turn your calculator OFF.

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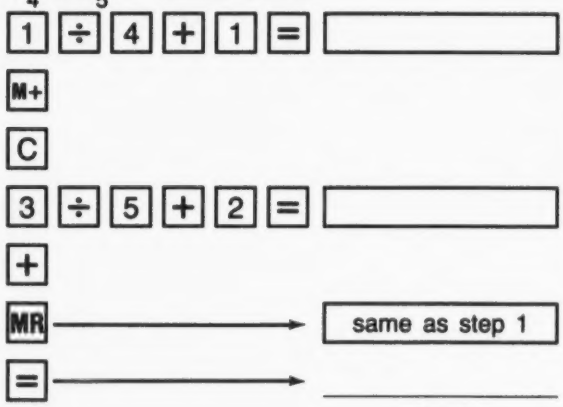
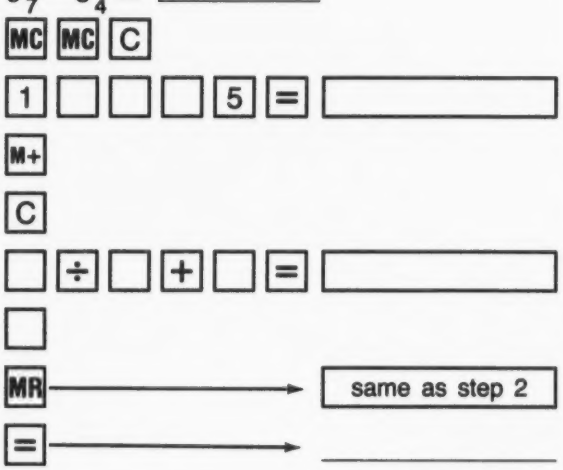
Calculating with the Memory Keys

Use the memory keys and key in these problems. Finish writing the keys you press. Write what shows on the display.

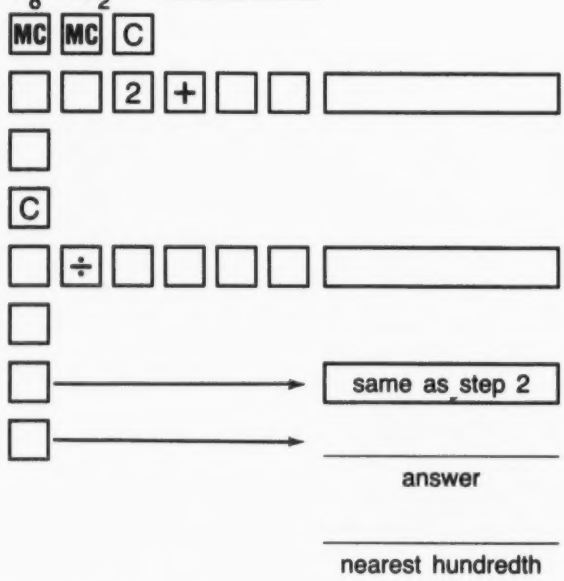
A. $1\frac{1}{4} + 2\frac{3}{5} =$ _____



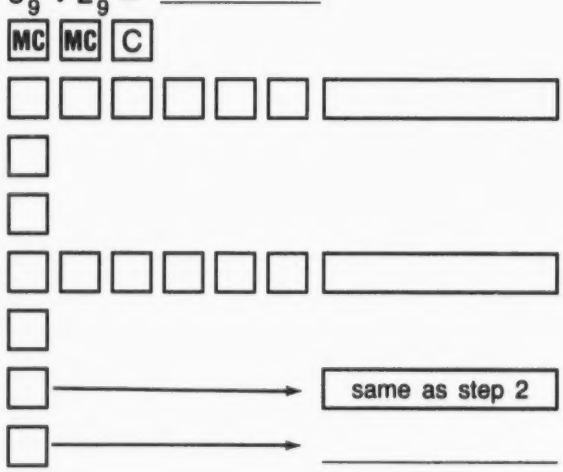
B. $9\frac{3}{7} - 5\frac{1}{4} =$ _____



C. $7\frac{7}{8} \times 3\frac{1}{2} =$ _____



D. $8\frac{5}{9} \div 2\frac{1}{9} =$ _____



Score: _____ no. right _____ no. wrong (Key in those problems again.)

Reminder: Turn your calculator OFF.

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Unit 5: Calculator Check

Calculating Math Problems

Key in these problems and write the answers. If you need to, round them to the nearest hundredth. To check your answers, do this: key in the problem two times. If you get different answers, key in the problem again and again until you get the same answers.

1. Change these fractions to decimals.

   a. $\frac{4}{5}$ = _____

   b. $\frac{5}{6}$ = _____

   c. $\frac{8}{9}$ = _____

   d. $\frac{3}{8}$ = _____

   e. $\frac{2}{3}$ = _____

   f. $\frac{2}{7}$ = _____

   g. $\frac{3}{10}$ = _____

2. Change these mixed numbers to mixed decimals.

   a. $9\frac{2}{7}$ = _____

   b. $3\frac{1}{14}$ = _____

   c. $37\frac{2}{3}$ = _____

   d. $89\frac{2}{5}$ = _____

   e. $425\frac{5}{6}$ = _____

   f. $1{,}009\frac{5}{9}$ = _____

   g. $50{,}000\frac{15}{100}$ = _____

3. Use the memory key and solve these problems.

   a. $4\frac{1}{3} + 15\frac{3}{4} =$ _____

   b. $11\frac{2}{3} - 5\frac{1}{6} =$ _____

   c. $2\frac{7}{8} + 5\frac{1}{3} =$ _____

   d. $\$12.67 - 9\frac{1}{2} =$ _____

   e. $\$431 \div 23\frac{3}{10} =$ _____

   f. $\$5{,}674.52 \div 8\frac{1}{10} =$ _____

   g. $\$29.86 \times 12\frac{1}{6} =$ _____

How did you do so far?

Check your answers with the answer key. Then score yourself.

Score:

_____ no. right

_____ no. wrong

Go on to page 2.

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Name: _____

Unit 5: Calculator Check

Calculating Word Problems

Finish writing the math sentences for these word problems. Find their answers on your calculator. Check your answers by keying in the problems again until you get the same answers. Then write the answers. If you need to, round them to the nearest hundredth.

1. Tami buys a chicken to cook for dinner. It weighs $4\frac{1}{8}$ pounds. It costs $1.09 a pound. How much does Tami pay for it?

   _____ X _____ = _____
   math sentence — answer

2. Li made a high jump of $4\frac{8}{9}$ feet. Her best high jump is $5\frac{3}{5}$ feet. How much higher is her best high jump?

   _____ − _____ = _____
   math sentence — answer

3. A butcher is wrapping ground meat. He wraps $1\frac{3}{4}$ pounds of meat per package. How many packages can he make out of $59\frac{1}{2}$ pounds of ground meat?

   _____ ÷ _____ = _____
   math sentence — answer

4. Kit works part-time. He records his time by the quarter hour. Here are his hours for last week: Monday—$6\frac{1}{2}$ hours; Tuesday—$8\frac{1}{4}$ hours; Thursday—$5\frac{3}{4}$ hours; and Saturday—$4\frac{1}{2}$ hours. How many hours altogether did Kit work last week?

   _____ + _____ + _____ = _____
   math sentence — answer

Score:

_____ no. right

_____ no. wrong

Reminder: Turn your calculator OFF.

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Unit 6: The Percent Key

A. Do these problems on your calculator. If you need to, round your answers to the nearest hundredth.

1. 50% of 300 = _____
2. 118 + 15% = _____
3. $49.50 − 40% = _____
4. $129.88 + 45% = _____
5. 100 is _____% of 500
6. 36 is 30% of _____
7. 15 is _____% of 60
8. $3.08 − 10% = _____

B. Write math sentences for these word problems. Then find the answers on your calculator. (The first is started for you.)

1. Tali plays basketball. She tries to shoot 40 baskets, but she makes only 28 of them. What percent of the total baskets does she make?

   28 is __% of 40 = _____
   math sentence — answer

2. John takes in 1,200 calories a day. His doctor puts him on a diet. She tells him to increase his daily calories by 25%. How many daily calories should John now take in?

   _____ = _____
   math sentence — answer

3. Fred is a waiter. He gives a check for $38.50 to a customer. The customer leaves him a 15% tip. How much is the tip?

   _____ = _____
   math sentence — answer

4. Midge buys a gold necklace on sale. The sale price is $45. That's 40% of the regular price. What is the regular price?

   _____ = _____
   math sentence — answer

Score:

_____ no. right

_____ no. wrong

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Period: _____ Date: _____

Calculating Percents

A. Write the keys you'd press to do these problems. (Some are written for you.) Then press the keys and write your answers. If you need to, round your answers to the nearest hundredth.

1. 10% of 80 = [8][0][×][1][0][%] _____
2. 9% of 26.57 = [ ][ ][.][ ][ ][×][ ][%] _____
3. 15% of $300.98 = [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ] _____
4. 11.5% of $500 = [ ][ ][ ][ ][ ][ ][ ][ ][ ] _____
5. 3.9% of $12.99 = [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ] _____

B. Do these problems on your calculator. If you need to, round your answers to the nearest hundredth.

1. 5% of 250 = _____
2. 25% of $52.29 = _____
3. 18.5% of $2,892 = _____
4. 60% of $29.70 = _____
5. .65% of $333.42 = _____
6. .06% of $23.84 = _____

C. Solve these word problems on your calculator.

1. Norrel takes a friend out to dinner. Their check comes to $22.18. He leaves a 12% tip for the waiter. How much is the tip?

   Answer: _____

2. Elsa has $658.39 in her savings account. The bank gives her an interest of 5.85% for that amount. How much does she get as interest?

   Answer: _____

Bonus: Find ads about interest rates at different banks. Then compare how much interest you'd receive for $200.

Score:

_____ no. right

_____ no. wrong (Key in those problems again.)

Reminder: Turn your calculator OFF.

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Subject: _____ Name: _____

Period: _____ Date: _____

Finding Reduced Amounts

A. You can figure *reduced amounts* on your calculator. Some calculators give those amounts when you press the *percent* key. Other calculators give you those amounts when you press the *equals* key. Which key gives reduced amounts on your calculator?

_____

B. Write the keys you'd press to find the answer to these problems. (If you use the equals key, write its sign in the dotted box.) Then do the problems on your calculator and write their answers. If you need to, round them to the nearest hundredth.

1. 42 − 18% = [4][2][−][1][8][%][ ] _____
2. $89.99 − 23% = [ ][ ][•][ ][ ][−][ ][ ][ ][ ] _____
3. $64.50 − 15% = [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ] _____
4. $5,731 − 46% = [ ][ ][ ][ ][ ][ ][ ][ ][ ] _____

C. Find the answers to these problems on your calculator. Round your answers to the nearest hundredth.

1. $68.99 − 25% = _____
2. $974.99 − 15% = _____
3. 568 − 20% = _____
4. 10,000 − 23% = _____
5. 37,029 − 36% = _____
6. 477,000 − 50% = _____

Score:

_____ no. right

_____ no. wrong
(Key in those problems again.)

Reminder: Turn your calculator OFF.

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Subject: _____ Name: _____

Period: _____ Date: _____

Finding Increased Amounts

A. You can figure *increased amounts* on your calculator. Which key gives the increased amount on your calculator: the *percent* key or the *equals* key?

_____

B. Write the keys you'd press to find the answers to these problems. (If you use the equals key, write its sign in the dotted box.) Then do the problems on your calculator and write their answers. If you need to, round them to the nearest hundredth.

1. 14 + 50% = [1][4][+][5][0][%][ ] _____
2. $67.50 + 24% = [ ][ ][.][ ][ ][+][ ][ ][ ][ ] _____
3. $500 + 12.5% = [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ] _____
4. 20,389 + 150% = [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ] _____

C. Find the answers to these problems on your calculator. Round your answers to the nearest hundredth.

1. $90.99 + 3% = _____
2. $22.18 + 12% = _____
3. $658.39 + 9.85% = _____
4. 2,067,390 + 50% = _____
5. 650,920 + 7% = _____
6. 9,267 + 200% = _____

Score:

_____ no. right

_____ no. wrong
(Key in those problems again.)

Reminder: Turn your calculator OFF.

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Subject: _____ Name: _____

Period: _____ Date: _____

Reduced and Increased Amounts

To do these word problems, you add or subtract a certain percent. Write a math sentence for each problem. Then find its answer on your calculator. Round your answers to the nearest hundredth. (One is started for you.)

1. A clock radio is on sale. Its regular price is $12.99. Its sale price is 25% less. How much is its sale price?

   $12.99 - 25% = _____
   math sentence answer

2. A candy company increases the size of its candy bars by 25%. They used to weigh 9 grams. How much do they weigh now?

   _____ = _____
   math sentence answer

3. Mila earns $12,500 a year. She gets a 35% pay increase. What is her new salary?

   _____ = _____
   math sentence answer

4. The Ace Factory has 3,400 workers. It lays off 34% of those workers. How many workers are left?

   _____ = _____
   math sentence answer

Score:

_____ no. right

_____ no. wrong
(Key in those problems again.)

Bonus: On the back of this paper, write a word problem about a sale. Figure out how much something will cost if it is 15% cheaper. Figure out how much it will cost if its regular price is increased 9%.

Reminder: Turn your calculator OFF.

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Subject: _____ Name: _____

Period: _____ Date: _____

What's the Percent?

A. Write the keys you'd press to find the percent of an amount. Then press the keys and write the answers. If you need to, round your answers to the nearest whole percent.

1. 5 is _____% of 10 [5] [÷] [1] [0] [%] _____%
2. 7 is _____% of 20 [ ] [ ] [ ] [0] [%] _____%
3. 9 is _____% of 17 [ ] [ ] [ ] [ ] [ ] _____%
4. 270 is _____% of 300 [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] _____%

B. Do these problems on your calculator. (The first is done.) If you need to, round your answers to the nearest whole percent.

1. 10 is 20 % of 50 .
2. 118 is _____% of 1,893
3. $35 is _____% of $333.44
4. $101 is _____% of $2,224
5. $1.29 is _____% of $12.32
6. 12.5 is _____% of 783

C. Write a math sentence for each word problem. Then find the answer on your calculator. Round your answers to the nearest whole percent.

1. Joyce has 25 math problems on her test. She gets 18 right. What percent did she get right?

_____ (math sentence) = _____ (answer)

2. Gila buys a basketball for $14.99. Its regular price is $18.99. What percent of the regular price is the sale price?

_____ (math sentence) = _____ (answer)

Score:

_____ no. right

_____ no. wrong
(Key in those problems again.)

Reminder: Turn your calculator OFF.

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Subject: _____ Name: _____

Period: _____ Date: _____

What's the Amount?

A. Write the keys you'd press to find the amount. Then press the keys and write the answer.

1. 12 is 75% of _____ [1][2][÷][7][5][%] _____
2. 25 is 25% of _____ [ ][ ][ ][ ][ ][ ] _____
3. 800 is 5% of _____ [ ][ ][ ][ ][ ][ ] _____
4. $1,300 is 10% of _____ [ ][ ][ ][ ][ ][ ][ ][ ] _____

B. Do these problems on your calculator. If you need to, round your answers to the nearest hundredth.

1. 12 is 20% of _____
2. 129 is 13% of _____
3. $48 is 40% of _____
4. $2.38 is 8% of _____
5. $789 is 6.5% of _____
6. $369 is 18.5% of _____

C. Write math sentences for these word problems. Then do the problems on your calculator. Round your answers to the nearest hundredth.

1. Leah is a sales person for a computer store. At Christmas, she sold 108 personal computers. That's 25% of what she sold all year. How many computers did she sell altogether?

_____ (math sentence) = _____ (answer)

2. Leroy buys a stereo. He puts $80 down for it. That's 20% of the total cost. How much does the stereo cost altogether?

_____ (math sentence) = _____ (answer)

3. A newspaper took a special poll. 458 people answered yes to the poll. That's about 60% of the total number of people polled. Find the total number that the newspaper polled.

_____ (math sentence) = _____ (answer)

Score:

_____ no. right

_____ no. wrong

(Key in those problems again.)

Reminder: Turn your calculator OFF.

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Subject: _____ Name: _____

Period: _____ Date: _____

Checking Percents

Learn how to check the answers you get with the percent key. Practice keying in these problems.

A. Checking the amount of a percent: 25% of 8 = _____

1. Key in the problem, get the answer. 1. [8] [×] [2] [5] [%] 2 answer
2. Press the key to divide. 2. [÷]
3. Key in the number again. 3. [8]
4. Press the percent key. You'll get the percent in the problem. 4. [%] 25% answer check

Practice problems: a. 5% of 20 = _____ answer _____ answer check

b. 12% of 72 = _____ answer _____ answer check

B. Checking the percent: 10 is _____% of 50

1. Key in the problem, get the answer. 1. [1] [0] [÷] [5] [0] [%] 20 answer
2. Press the key to multiply. 2. [×]
3. Key in the large number and percent key. You'll get the small number. 3. [5] [0] [%] 10 answer check

Practice problems: a. 20 is _____ (answer)% of 80 _____ answer check

b. 16 is _____ (answer)% of 128 _____ answer check

C. Checking the total amount: 4 is 25% of _____

1. Key in the problem, get the answer. 1. [4] [÷] [2] [5] [%] 16 answer
2. Press the key to multiply. 2. [×]
3. Key in the percent and percent key. You'll get the number in the problem. 3. [2] [5] [%] 4 answer check

Practice problems: a. 30 is 75% of _____ answer _____ answer check

b. 20 is 5% of _____ answer _____ answer check

Reminder: Turn your calculator OFF.

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Subject: _____ Name: _____

Period: _____ Date: _____

Checking Reduced and Increased Amounts—A

If you press the *equals* key to get the answer, you can check that answer in these ways. Practice keying in these problems.

A. Checking a reduced amount: 12 − 25% = _____

1. Key in the problem but *not* the equals key.
   1. [1] [2] [−] [2] [5] [%] display: −3.
2. Press the *memory minus* key.
   2. [M−]
3. Press the equals key and get the answer.
   3. [=] → 9 answer
4. Press the key to add.
   4. [+]
5. Press the *memory recall* key.
   5. [MR]
6. Press the *equals* key and get the number in the problem.
   6. [=] → 12 answer check

Practice problems: a. 90 − 30% = _____ answer _____ answer check

b. 128 − 75% = _____ answer _____ answer check

B. Checking an increased amount: 4 + 50% = _____

1. Key in the problem but *not* the equals key.
   1. [4] [+] [5] [0] [%] display: 2.
2. Press the *memory plus* key.
   2. [M+]
3. Press the *equals* key and get the answer.
   3. [=] → 6 answer
4. Press the key to subtract.
   4. [−]
5. Press the *memory recall* key.
   5. [MR]
6. Press the *equals* key and get the number in the problem.
   6. [=] → 4 answer check

Practice problems: a. 65 + 30% = _____ answer _____ answer check

b. 18 + 50% = _____ answer _____ answer check

Reminder: Turn your calculator OFF.

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Subject: _____ Name: _____

Period: _____ Date: _____

Checking Reduced and Increased Amounts—B

If you press the *percent* key to get the answer, you can check that answer in these ways. Practice keying in these problems.

A. Checking a reduced amount: 12 − 25% = _____

1. Key in the problem, get the answer. 1. [1] [2] [−] [2] [5] [%] 9 answer
2. Press the *memory plus* key. 2. [M+]
3. Clear the display. 3. [C]
4. Find the amount of the percent. 4. [1] [2] [×] [2] [5] [%] 3 amount of percent
5. Press the key to add. 5. [+]
6. Press the *memory recall* key. 6. [MR]
7. Press the *equals* key and get the number in the problem. 7. [=] 12 answer check

Practice problems: a. 90 − 30% = _____ answer _____ answer check

b. 128 − 75% = _____ answer _____ answer check

B. Checking an increased amount: 4 + 50% = _____

1. Key in the problem, get the answer. 1. [4] [+] [5] [0] [%] 6 amount
2. Press the *memory plus* key. 2. [M+]
3. Clear the display. 3. [C]
4. Find the amount of the percent. 4. [4] [×] [5] [0] [%] 2 amount of percent
5. Press the key to subtract. 5. [−]
6. Press the *memory recall* key. 6. [MR]
7. Press the *equals* key and get the number in the problem.* 7. [=] 4 answer check

Practice problems: a. 65 + 30% = _____ answer _____ answer check

b. 18 + 50% = _____ answer _____ answer check

*The answer check will have a negative value but the same absolute value.

Reminder: Turn your calculator OFF.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 6: Calculator Check

Read these word problems. Write math sentences for them. Do the problems on your calculator. Check your answers. (The first is started for you.)

1. A state sends 171 delegates to the Democratic Convention. 86 of them are women. What percent of the delegates are women?

   86 is ___% of 171 = _____ _____
   math sentence | answer | answer check

2. Munch Village is a children's playground. This year, 20,483 children visited it. 38% of them were handicapped children. How many handicapped children visited Munch Village?

   _____ = _____ _____
   math sentence | answer | answer check

3. Jean buys a sweater. She pays $42.89 for the sweater *and* for a 7% sales tax. What is the price of the sweater?

   _____ = _____ _____
   math sentence | answer | answer check

4. Zariv pays $378.53 for rent. His landlord then raises his rent by 8%. How much is Zariv's rent now?

   _____ = _____ _____
   math sentence | answer | answer check

Score:

_____ no. right

_____ no. wrong

Reminder: Turn your calculator OFF.

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ESTIMATION

Workbook by: Renée Bostick / Susan D. Echaore / Winifred Ho Roderman

WorkMasters™ by: Renée Bostick / Susan D. Echaore / Winifred Ho Roderman / Mary Friedland

Teacher's Guide by: Katherine D. Perez, Ed.D.
Director, Special Education, Saint Mary's College, Moraga, California

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Contents

Teacher's Guide E2–E6
- Teaching Suggestions E2
- Workbook Answer Key E4
- WorkMasters Answer Key E5

WorkMasters E7–E47
Workbook pages for each WorkMaster are listed in parentheses.

Unit 1: What's Your Estimate? E7–E12
- Unit pre-post test E7
- Make an Estimate! *(p. 4)* E8
- What Are the Facts? *(p. 4)* E9
- Estimating Facts *(p. 5)* E10
- Making Sensible Estimates *(p. 6)* E11
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Unit 2: Easy Numbers E13–E19
- Unit pre-post test E13–E14
- Easy Evens *(p. 9)* E15
- Easy Fives *(p. 10)* E16
- Easy Tens *(p. 11)* E17
- Your Easy Numbers *(p. 12)* E18
- Unit review: Estimation Check *(pp. 8–12)* E19

Unit 3: Getting Close Estimates E20–E27
- Unit pre-post test E20
- Which Is Nearest? *(p. 13)* E21
- Estimating with Easy Evens *(p. 14)* E22
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- Which Easy Numbers? *(pp. 14–16)* E25
- Unit review: Estimation Check *(pp. 13–18)* E26–E27

Unit 4: Easy Fractions E28–E38
- Unit pre-post test E28
- Estimating 1/2 of an Amount *(p. 19)* E29
- Estimating 1/4 of an Amount *(p. 20)* E30
- Estimating 3/4 of an Amount *(p. 21)* E31
- Rounding to Easy Fractions *(p. 22)* E32
- More or Less *(p. 23)* E33
- Estimating with Easy Fractions *(p. 23)* E34
- A Closer Estimate *(p. 23)* E35
- Making Closer Estimates *(p. 23)* E36
- Estimating with Mixed Numbers *(p. 24)* E37
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Unit 5: Easy Decimals, Easy Percents E39–E47
- Unit pre-post test E39
- Easy Fractions, Easy Decimals *(p. 26)* E40
- Estimating with Easy Decimals *(p. 27)* E41
- Estimating with Easy Percents *(p. 28)* E42–E43
- Estimating with Easy 10% *(p. 28)* E44
- Rounding Decimals and Percents *(p. 29)* E45
- How Much Do You Save? *(p. 29)* E46
- Unit review: Estimation Check *(pp. 26–30)* E47

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ESTIMATION Teacher's Guide

by Dr. Katherine D. Perez

OVERVIEW

Part of solving word problems successfully is knowing when an answer is reasonable. ***Estimation,*** the fourth workbook in the Janus ***Math in Action: Word Problems*** series, helps your students know when they have computed correctly by teaching them how to make reasonable estimates.

This workbook emphasizes the logical thought processes involved in estimating answers. It teaches strategies that can help students estimate quickly and easily. *Estimation* will reinforce the estimating skills that students already have. It will also help them discover whole numbers and fractions that they can handle mentally for each math operation.

OBJECTIVES OF THIS WORKBOOK

Upon completion of this workbook and corresponding WorkMasters, the student will be able to:

- make sensible estimates;
- use strategies to estimate whole numbers, fractions, decimals, and percents;
- identify numbers that he can easily use for estimation;
- apply his learning to everyday situations.

TEACHING SUGGESTIONS

Introducing the Workbook

Many students already have strong estimating skills and utilize them in their daily activities. Yet, some students will resist estimating in their math class. Before they begin studying *Estimation*, help students conclude that the logic they use for estimating in their real-life activities is the same logic involved in estimating math answers.

You might bring in different objects that students can use to estimate such things as weight, length, cost, and amount. Discuss how they came up with their estimates. Ask them how they could apply that same logic to estimating math answers.

Now distribute the workbook and read the introduction to them.

Building Up Skills

Initially, have students do their figuring on paper or on a calculator. By showing all their work on paper, students can analyze any unreasonable estimates that they produce. As they gain confidence and skill, encourage them to figure in their heads.

Keep the answers handy so that students can check their estimates immediately. As they check their work, have them think of ways to fine-tune their strategies.

The more students drill and review, the easier and more accurate their estimating becomes. Try starting a class session with practice drills. Work on speed and mental calculating, as well as the basic operations. Surprise your class by presenting a different drill format each day; the formats can incorporate various combinations of reading, listening, writing, and reciting. Have team games and contests, and keep class records for speed and accuracy. Have students keep charts of their own speed and accuracy. Challenge them to sharpen their skills by beating their own records.

Puzzlers

To help your students understand the concept of estimation, occasionally present activities that are not math-based. For instance, fill different-shaped jars with water and ask students to guess which jar has the most water. Or fill a jar with jelly beans (start with a small jar) and ask them to guess the number of beans in the container. Encourage students to devise other activities for the whole class to puzzle over.

Success

Try to ensure that your students end each unit successfully. Conduct an informal review before they do the final activity in the unit. Discuss any concepts they don't understand. Drill the necessary math skills. You might want to give Awards of Excellence for successful work.

TEACHING THE UNITS

This section contains brief descriptions of each workbook page and suggested enrichment activities. Corresponding WorkMasters are listed in parentheses after each page description.

Unit 1: What's Your Estimate?

Students learn about the factors involved in making sensible estimates. (Unit pre-post test, E7; unit review, E12)

PAGE 4: **What's Your Estimate?**
Students discuss the concept of estimation and apply it to some real-life situations. (E8; E9)

PAGE 5: **Estimating Facts**
Students learn that they must be familiar with the facts to make a sensible estimate. In this lesson, students estimate inches. To expand the activity, have them estimate other units of measure. (E10)

PAGE 6: **Wrong Estimate!**
Students check whether their estimates are sensible. As a class activity, have students discuss wrong estimates that have caused them trouble and how they could have reached better estimates. (E11)

PAGE 7: **Estimation Workout**
Students apply what they learned in this unit. (E12)

Enrichment Activities
- Have students create an estimation bulletin board that illustrates real-life estimation problems. Assign different students to do the board every week.
- Have students keep personal estimation logs. They can estimate such outcomes as how much money they'll spend or how many pages they'll read in a week. They should record actual answers next to their estimates.

Unit 2: Easy Numbers

Students learn that even numbers, fives, and tens make estimating easier. (Unit pre-post test, E13–E14; unit review, E19)

PAGE 8: **Easy Numbers**
Students discover that some numbers are easier to use for estimation purposes.

PAGE 9: **Easy Evens**
Students figure problems containing even numbers. (E15)

PAGE 10: **Easy Fives**
Students do calculations featuring fives. (E16)

PAGE 11: **Easy Tens**
Students use tens in math operations. (E17)

PAGE 12: **Estimation Workout**
Students apply what they learned in this unit. (E18; E19)

Enrichment Activities
- Give students a ditto master and have them make up a drill that uses the easy numbers.
- Have students design a poster about easy numbers.

Unit 3: Getting Close Estimates

Students round numbers to the nearest even number, five, or ten to get an estimate. (Unit pre-post test, E20; unit review, E26–E27)

PAGE 13: **Getting Close Estimates**
Students learn that *rounding* means changing a number to another number. They conclude that the closer the rounded number is to the actual number, the closer their estimate is to the actual answer. (E21)

PAGE 14: **Rounding to Even Numbers**
Students round numbers up *and* down to the nearest even number. (E22; E25)

PAGE 15: **Rounding to Easy Fives**
Students round numbers to the nearest five. (E23; E25)

PAGE 16: **Rounding to Easy Tens**
Students round numbers to the nearest ten. (E24; E25)

PAGE 17: **Which Easy Numbers?**
Students assess which numbers are easiest for them to estimate within each math operation.

PAGE 18: **Estimation Workout**
Students apply what they learned in this unit. (E26–E27)

Enrichment Activities
- Using such realia as store ads, have students round and estimate prices.
- Working in groups, the students can write TV commercials about the advantages of using their favorite easy numbers. Have the groups perform their commercials in class.

Unit 4: Easy Fractions

Students estimate answers by using "easy" fractions—¼, ½, and ¾. (Unit pre-post test, E28; unit review, E38)

PAGE 19: **Easy Fractions**
Students figure ½ of an amount by dividing that amount by 2. (E29)

PAGE 20: **Estimating with ¼**
Students calculate ¼ of an amount by first finding ½ of that amount, then finding ½ of that answer. (E30)

PAGE 21: **Estimating with ¾**
Students figure ¾ of an amount by finding the amounts for ½ and ¼, then adding those two amounts. Help students conclude that ¾ is made up of the fractions ½ and ¼. (E31)

PAGE 22: **Rounding to Easy Fractions**
Students learn that they can round any fraction to an easy fraction that is close to it. They can round some fractions up *and* down to an easy fraction. (E32)

PAGE 23: **More or Less**
Students realize that rounding a fraction *up* to an easy fraction makes their estimate *more* than the actual answer and that rounding a fraction *down* makes their estimate *less* than the answer. (E33; E34; E35; E36 Note: WorkMaster E36 teaches a trick for quick mental figuring that often gives a very close estimate. The benefit of this activity lies in exercising the student's mental figuring skills so he can advance to discovering his own estimating tricks.)

PAGE 24: **Rounding to Whole Numbers**
Students estimate addition and subtraction problems with mixed numbers by rounding one mixed number to a whole number. (E37)

PAGE 25: **Estimation Workout**
Students apply what they learned in this unit. (E38)

Enrichment Activities
- Have students list their activities within a 10-hour weekday and figure what fraction of the day each activity takes up. Post their findings in the classroom.
- Have students estimate how many songs their favorite radio station plays in a half hour and how many minutes each song lasts. Then have them discuss their findings.

Unit 5: Easy Decimals, Easy Percents

Students use the easy fractions to estimate some decimal problems and some percent problems. Make sure the students have mastered the easy fractions before they begin this unit. (Unit pre-post test, E39; unit review, E47)

PAGE 26: **Easy Decimals, Easy Percents**
Students learn the decimal values of the easy fractions. (E40)

PAGE 27: **Using Easy Decimals**
Students figure decimal amounts by using the easy fractions. (E41)

PAGE 28: **Easy Percents**
Students use easy fractions to figure amounts that are decreased by a certain percentage. (E42–E43; E44)

PAGE 29: **Rounding Decimals and Percents**
Students practice rounding decimals and percents in all the ways they've learned so far. Consider having students do this page in groups. (E45; E46)

PAGE 30: **Estimation Workout**
Students apply what they learned in this unit as they estimate answers to word problems. (E47)

Enrichment Activities
- Have students make up a game modeled after TV game shows that ask contestants to estimate prices.
- Have students go to a store sale and list the items they would like to buy, their regular prices, and the percent off. In class, have them demonstrate how to figure a sale price with the easy fractions.

PAGE 31: **Estimation Reminders**
This page gives a reference list of main concepts students need to remember when they estimate. A summary of easy fractions and their decimal and percent values is also included.

ESTIMATION
Workbook Answer Key

Unit 1: What's Your Estimate?

Page 7 Estimation Workout Actual measurements: **1. a.** 2″ **b.** 3″

Unit 2: Easy Numbers

Page 9 Easy Evens Even numbers: 60, 62, 64, 66, 68, 70
Page 10 Easy Fives Forward: 20, 30, 45, 55, 65, 75, 80, 85, 90, 95 Backward: 40, 30, 20, 10, 5

Unit 3: Getting Close Estimates

Page 13 Getting Close Estimates **1.** 10 **2.** 30 **3.** 10
Page 14 Rounding to Even Numbers Up: 8; 24 Down: 6; 22 **1.** 2; 4 **2.** 8; 10 **3.** 16; 18 **4.** 24; 26 **5.** 108; 110
Page 15 Rounding to Easy Fives *Estimate:* 25. The estimate and the actual answer are the same.
Page 16 Rounding to Easy Tens *Estimate:* 50 **1.** 20 **2.** 40 **3.** 30. The closest estimate, 30, is two numbers away from 32.
Page 18 Estimation Workout **1.a.** 2, 4; 6, 8; 8, 10 **b.** 24, 26; 62, 64; 98, 100 **c.** 126, 128; 282, 284; 694, 696 **2.a.** none, 5; 5, 10; none, 5 **b.** 20, 25; 60, 65; 75, 80 **c.** 120, 125; 460, 465; 925, 930 **3.a.** 10; 10; 60 **b.** 140; 370; 830 **c.** 1,290; 2,470; 6,920

Unit 4: Easy Fractions

Page 19 Easy Fractions *Estimate:* $4 *or* $5. The estimate is $.50 more or less than $4.50.
Page 20 Estimating with 1/4 **1.** $32 *or* $34 **2.** $16 *or* $17
Page 21 Estimating with 3/4 **1.** 6 **2.** 3
Page 22 Rounding to Easy Fractions **1.** none; 1/4 **2.** 1/4; 1/2 **3.** 1/2; 3/4 **4.** 3/4; none
Page 23 More or Less Very close estimate: 3 **Bonus** **1.** 6 **2.** 3 *or* 6 **3.** 12
Page 24 Rounding to Whole Numbers **1.** 1 **2.** 2 **3.** 3 **4.** 2 **5.** 3 **6.** 4
Page 25 Estimation Workout **1.a.** 1/2 *or* 3/4 **b.** 12 **2.** Answers will vary.

Unit 5: Easy Decimals, Easy Percents

Page 26 Easy Decimals, Easy Percents 1. .25 + .25 2. .25 + .50 3. .25 + .75 4. .50 + .50 5. .50 + .75 6. .75 + .75 **Bonus** 1. .50 2. .75 3. 1.00 4. 1.00 5. 1.25 6. 1.50

Page 28 Easy Percents/Bonus $35

Page 29 Rounding Decimals and Percents 1.a. .66; .68 b. 3.32; 3.34 c. 36%; 38% d. 2%; 4% 2.a. .5 b. .15 c. 15% d. 5% 3.a. .10 b. .30 *or* .40 c. 30% d. 10% 4.a. .25 b. .50 c. 75% d. 50% 5.a. 2 b. 3 c. 3 d. 2

ESTIMATION
WorkMasters Answer Key

Unit 1: What's Your Estimate?

E7 Unit 1: What's Your Estimate? 1.a. 9 p.m. b. 10:30 p.m. 2. Accept all reasonable facts. 3.a. 5 minutes b. 40¢ c. 12 inches

E9 What Are the Facts? 1. the hourly rate; the number of work hours required 2. how much each food or party item costs; how many of each item are needed 3. the individual amounts spent for food, rent, utilities, and other expenses each month

E11 Making Sensible Estimates 1. 40 minutes 2. 3 feet 3. $6.50

Unit 2: Easy Numbers

E13–E14 Unit 2: Easy Numbers A. 1. 22 2. 72 3. 32 4. 8 5. 56 6. 192 7. 1,208 8. 8 B. 1. 175 2. 130 3. 360 4. 125 5. 35 6. 195 7. 8,125 8. 69 C. 1. 4 2. 4,000 3. 350 4. 390 5. 40 6. 330 7. 13,200 8. 34

E15 Easy Evens 1. 14 2. 42 3. 1,082 4. 13,530 5. 2 6. 16 7. 56 8. 4,338 9. 184 10. 168 11. 13,888 12. 237,496 13. 4 14. 9 15. 3 16. 201 17. 70 18. 22 19. 1,200 20. 32

E16 Easy Fives 1. 10 2. 135 3. 19,305 4. 6,195 5. 0 6. 70 7. 175 8. 4,450 9. 25 10. 75 11. 3,625 12. 137,775 13. 1 14. 2 15. 23 16. 3,071 17. 35 18. 400 19. 75 20. 151

E17 Easy Tens 1. 80 2. 1,160 3. 9,780 4. 17,470,250 5. 40 6. 240 7. 8,400 8. 2,115,550 9. 1,000 10. 22,000 11. 690,000 12. 311,404,000 13. 2 14. 9 15. 130 16. 1,340 17. 80 18. 630 19. 1,600 20. 60

E18 Your Easy Numbers A. Easy Evens 1. 546 2. 162 3. 5,656 4. 7 B. Easy Fives 1. 9,130 2. 130 3. 139,875 4. 105 C. Easy Tens 1. 23,893,970 2. 30 3. 3,400 4. 30

E19 Unit 2: Estimation Check 1. Easy Evens: 2 through 30 2. Easy Fives: 5 through 75 3. Easy Tens: 10 through 150

Unit 3: Getting Close Estimates

E20 Unit 3: Getting Close Estimates/A. 1.a. 2; 4 b. 6; 8 c. 12; 14 d. 58; 60 e. 120; 122 f. 2,566; 2,568 2.a. 5 b. 5 c. 15 d. 55 e. 285 f. 1,365 3.a. 10 b. 10 c. 40 d. 200 e. 2,790 f. 1,800 B. Actual answers: 1. 116 2. 9 3. 17,081

E21 Which Is Nearest? 1. 2; 4; 5; 10 2. 6; 8; 5; 10 3. 12; 14; 15; 10 4. 8; 10; 10; 10 5. 10; 12; 10; 10 6. 30; 32; 30; 30 7. 40; 42; 40; 40 8. 36; 38; 35; 40 9. 42; 44; 45; 40 10. 32; 34; 35; 30 11. 166; 168; 165; 170 12. 170; 172; 170; 170 13. 178; 180; 180; 180 14. 168; 170; 170; 170 15. 172; 174; 175; 170

E22 Estimating with Easy Evens/A. 1. 6; 8 2. 2; 4 3. 12; 14 4. 18; 20 5. 120; 122 6. 338; 340 7. 1,466; 1,468 8. 20,582; 20,584 **Bonus** 1. $54 2. $168 3. 4.63 4. $3.45

E23 Estimating with Easy Fives/A. 1. 5 2. 5 3. 5 4. 90 5. 10 6. 25 7. 45 8. 105 9. 565 10. 370 11. 620 12. 1,395 13. 7,610 14. 9,250 15. 6,825 16. 12,645 17. 85,580 18. 92,640 19. 503,270 20. 674,255 B. 1. 43 2. 189 3. 3,378 4. 7.29

E24 Estimating with Easy Tens/A. 1. 10 2. 10 3. 10 4. 70 5. 10 6. 30 7. 60 8. 170 9. 900 10. 740 11. 350 12. 3,200 13. 7,780 14. 6,040 15. 4,870 16. 12,300 17. 58,620 18. 34,350 19. 826,430 20. 652,790 **Bonus** 1. 97 2. 59 3. 20,659 4. 19.34

E25 Which Easy Numbers?/Bonus 1. 64 2. 61 3. 385 4. 51.31 5. 8,874 6. 1,488 7. 222 8. 500 9. 276.27 10. 2,211,864 11. $462

E26–E27 Unit 3: Estimation Check/Bonus
1.a. 8,398 b. 4,684 c. 38,057 d. 17.64 e. $2,378
2.a. 5,895 b. 104,481 c. 41.64 d. 21,951 e. $1,547
3.a. 23.16 b. 1,861 c. 85,871 d. 330,558 e. 140

Unit 4: Easy Fractions

E28 Unit 4: Easy Fractions/A. 1. 1/4 2. 3/4 3. 3/4 4. 1/4 5. 1/2 6. 1/4 7. 1/2 *or* 3/4 8. 3/4 B. 1. 2 2. 1 3. 5 4. 10 5. 1 6. 2 7. 5 8. 10 C. Actual answers: 1. 123.5 2. 3 3. 52.5 4. 82.67 5. 5.6 6. 6.5 7. 57.14 8. 9.75 9. 48 10. 150

E29 Estimating 1/2 of an Amount/Bonus 1. $37.50 2. 11.5 3. 35 *or* 36 4. 19.5 5. $337.50 6. $641,283.50

E30 Estimating 1/4 of an Amount/Bonus 1. 6.75 2. $214 3. 53.75 4. 6 5. $8.25 6. $359.75

E31 Estimating 3/4 of an Amount/Bonus 1. $2,850 2. 155.25 3. 1,800 4. $93.75

E32 Rounding to Easy Fractions 1. 1/4; 1/2 2. 1/2; 3/4 3. 3/4; none 4. 1/2; 3/4 5. 1/4; 1/2 6. 1/2; 3/4 7. 3/4; none 8. 1/4; 1/2 9. 1/2; 3/4 10. none; 1/4 11. none; 1/4 12. 3/4; none 13. none; 1/4 14. 1/2; 3/4 15. 1/4; 1/2 16. 1/4; 1/2 17. none; 1/4 18. 1/4; 1/2

E34 Estimating with Easy Fractions/Bonus 1. 5.2 2. 24 3. 91.7 4. 1,927.33 5. $29.40 6. 245 7. $657 8. 68.57

E35 A Closer Estimate/Bonus 1. 26.67 2. 54.86

E36 Making Closer Estimates/Bonus 1. 13 2. 49 3. $4,941.60

E37 Estimating with Mixed Numbers/Bonus
1. 6-19/24 2. 9-16/35 3. 39-41/42 4. 176-7/15
5. 123-7/24 6. 36-1/15 7. 333-13/21 8. 121-23/40
9. 15-11/15 10. 154-5/24

E38 Unit 4: Estimation Check/Bonus 1. $7.40
2. 30 3. 91 4. 7-3/4

Unit 5: Easy Decimals, Easy Percents

E39 Unit 5: Easy Decimals, Easy Percents Actual answers: **1.a.** 18.25 **b.** 48.5 **c.** 82.5 **d.** 16.5
e. 132.07 **f.** 333.64 **2.a.** 17.5 **b.** 133.5 **c.** 2,250
d. 148.96 **e.** 46.56 **f.** 103.18 **3.** $63.75 **4.** $180
5. 62 *or* 63 **6.** $6,000

E40 Easy Fractions, Easy Decimals/Which Easy Fraction? 1. 3/4 2. 4-1/2 3. 1/4 4. 17-1/2
5. 21-1/2 6. 2-1/4 7. 124-1/2 8. 3-3/4 9. 13-1/4
10. 18-1/4 11. 1/2 12. 1-3/4 13. 8-1/4 14. 3-1/2
15. 115-1/2 16. 313-3/4 17. 458-1/4 **Which Easy Decimal?** 1. .25 2. .75 3. .50 4. 7.75 5. 9.25
6. 2.5 7. 5.75 8. 13.5 9. 18.5 10. 44.75 11. 67.25
12. 132.75 13. 321.25 14. 604.5 15. 1,213.25
16. 9,941.75 17. 20,426.5

E41 Estimating with Easy Decimals/Bonus
1.a. 21.5 **b.** 10.75 **c.** 32.25 **2.a.** 55.5 **b.** 27.75
c. 83.25 **3.a.** 173.5 **b.** 86.75 **c.** 260.25 **4.a.** 106.5
b. 53.25 **c.** 159.75 **5.a.** 3 **b.** 1.5 **c.** 4.5
6.a. $381.50 **b.** $190.75 **c.** $572.25

E42–E43 Estimating with Easy Percents/A. 1. 1.75; 1-3/4 2. .50; 1/2 3. .25; 1/4 4. 1.50; 1-1/2 5. .75; 3/4 6. 1.25; 1-1/4 **B.** Actual answers: 1. 40.25
2. 13.5 3. 136.5 4. 164.5 5. 966.75 6. 5,010.25
7. $97.31 8. $9.11 **C.** Actual answers: 1. $149.25
2. 1,731 *or* 1,732 3. $875 4. $325 5. 60 6. $280

E44 Estimating with Easy 10%/Estimating 10% Actual answers: 1. 7.6 2. .3 3. $.88 4. $.20
Estimating 5% Actual answers: 1. 1.2 2. 9.65
3. $.19 4. $.91 **Estimating 15%** Actual answers:
1. $1.91 2. $58.35 3. 102 4. 222.75

E45 Rounding Decimals and Percents/Bonus
1. .30 2. 28% 3. 4.23 4. 77% 5. 55.71 6. 57%
7. 12.57 8. 11.2% 9. 424.16 10. 125.64% 11. 459.34
12. 33.88%

E46 How Much Do You Save/Bonus 1. $55.60
2. $56.70 3. $22.39 4. $15 5. $24 6. $13.29

E47 Unit 5: Estimation Check/Bonus 1. $15
2. $7.35 3. $73.70 4. 7-1/2

Subject: _____ Name: _____

Period: _____ Date: _____

Unit 1: What's Your Estimate?

Read these sentences and answer the questions.

1. Suppose you're babysitting a small child. You start at 7 p.m. The child's mother tells you she thinks she'll be back in 2 hours. But she really gets back in $3\frac{1}{2}$ hours.
   a. What is the estimated time that the mother thinks she'll return?

   _____

   b. What is the actual time that she does return?

   _____

2. You plan to go to an amusement park. You wonder how much money you'll spend altogether. What facts would you need in order to estimate how much money to take?

   _____

3. Read these sentences. Draw a circle around the estimate that makes the best sense. Then tell why you think it makes the best sense.
   a. You must walk one whole block from your house. How long will it take you?

   1 minute 5 minutes 15 minutes

   That's the best estimate because _____

   _____

   b. Oranges cost $1.25 for 3 pounds. You want to buy 1 pound. About how much will you pay for it?

   12¢ 40¢ 90¢

   That's the best estimate because _____

   _____

   c. Look at this worksheet. About how many inches long is it?

   3 inches 12 inches 20 inches

   That's the best estimate because _____

   _____

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Subject: _____ Name: _____

Period: _____ Date: _____

Make an Estimate!

Estimate answers about things you do in real life.

1. What are some jobs that you do around the house? Write the names of jobs you'll do this week. Estimate how long it takes you to do each job. Then, when you do those jobs, time yourself. Write the actual times those jobs took next to your estimated times.

	Job	Estimated Time	Actual Time
a.	_____	_____	_____
b.	_____	_____	_____
c.	_____	_____	_____

2. What are some things that you might buy in the next two days? Write the names of those things. Estimate how much they cost. After you buy them, write their actual costs.

	Thing	Estimated Cost	Actual Cost
a.	_____	_____	_____
b.	_____	_____	_____
c.	_____	_____	_____

3. How far are these places from your house? Estimate the distance in blocks or miles. Then go to each of those places and count the actual distance. Write it next to the estimated distance.

	Place		Estimated Distance	Actual Distance
a.	_____ (name of school)	school	_____	_____
b.	_____'s (name of friend)	house	_____	_____
c.	_____ (name of store)	store	_____	_____

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Period: _____ Date: _____

What Are the Facts?

Here are some real-life situations you might have some day. Each situation needs an estimated answer. What facts would you need to make that estimate? Write those facts.

1. A person wants you to do this big job: cleaning his yard. He asks you to estimate how much he must pay you.

   Facts: _____

   _____

   _____

2. You're planning a party. You'll invite 16 people. About how much money will you need for everything?

   Facts: _____

   _____

   _____

3. You have a full-time job. You have your own apartment. And you pay all your own bills. About how much money altogether will you spend on bills per month?

   Facts: _____

   _____

   _____

Bonus: Write about a real-life situation where you had to make an estimate. Write about the facts that you used to make that estimate.

_____

_____

_____

_____

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Subject: _____ Name: _____

Period: _____ Date: _____

Estimating Facts

Practice using estimated facts to get an estimated answer. Get the things listed below. Then answer the questions. First estimate an answer. Then find the actual answer.

1. A flower vase
   (You'll also need a ruler, a measuring cup, water, and a timer.)

	Estimate	Actual Answer
a. How many *inches* tall is the vase?	_____	_____
b. How many *cups* of water does the vase hold?	_____	_____
c. How many *minutes* would it take to fill the vase with water?	_____	_____

2. A textbook
   (You'll also need a ruler and a scale.)

a. How many *inches* thick is the book?	_____	_____
b. How many *pounds* does the book weigh?	_____	_____

Now choose some other things. Write questions such as: How tall is it? How heavy is it? How many pencils, books, etc. does it hold? Estimate answers. Then find actual answers.

3. Name of thing: _____	Estimate	Actual Answer
a. How _____	_____	_____
b. How _____	_____	_____
4. Name of thing: _____		
a. _____	_____	_____
b. _____	_____	_____

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Subject: _____ Name: _____

Period: _____ Date: _____

Making Sensible Estimates

Here are some real-life problems you might have some day. Choose the estimate that makes the most sense. Then tell why.

1. You are doing homework. You must read five pages in a science book. Then you must write answers to four questions.
   a. About how long will that take you: 10 minutes, 40 minutes, or 90 minutes?

      _____

   b. Why is that a sensible estimate?

      _____

      _____

2. You're building a shelf for your stereo. It is 20 inches wide.
   a. About how long would the shelf be: $1\frac{1}{2}$ feet, 3 feet, or 10 feet?

      _____

   b. Why is that a sensible estimate?

      _____

      _____

3. You are paying for groceries. The bill is $13.48. You give the clerk $20.00.
   a. About how much change do you get back: $3.50, $6.50, or $9.50?

      _____

   b. Why is that a sensible estimate?

      _____

      _____

Bonus: Write about a bad estimate you made in real life. What would have been a better estimate? Why?

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 1: Estimation Check

What will you be doing tomorrow? Write some of the activities that you'll do. (For example: getting yourself ready for school, or buying something at the store.) Estimate how long each activity might take you. If you must spend money, also estimate the cost.

Activity	Time		Cost	
	Estimate	Actual	Estimate	Actual
1.				
2.				
3.				
4.				
5.				
6.				
7.				

Bonus: How close are your estimates? Write the actual time and money you spend on those activities.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 2: Easy Numbers

Which kinds of numbers are easiest for you? Do these problems. Write the time you start and the time you finish. Go as fast as you can.

A. Even Numbers

Time started: _____

1. 8 + 14 = _____ 2. 12 × 6 = _____ 3. 40 − 8 = _____ 4. 64 ÷ 8 = _____	5. 22 + 34 6. 256 − 64	7. 302 × 4 8. $4\overline{)32}$

Time finished: _____

B. Numbers Divided Evenly by Five (Easy Fives)

Time started: _____

1. 35 × 5 = _____ 2. 90 + 40 = _____ 3. 355 + 5 = _____ 4. 255 − 130 = _____	5. 60 − 25 6. 180 + 15	7. 125 × 65 8. $5\overline{)345}$

Time finished: _____

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Name: _____

Unit 2: Easy Numbers

C. Numbers Divided Evenly by Ten (Easy Tens)

Time started: _____

1. $80 \div 20 =$ _____ 2. $40 \times 100 =$ _____ 3. $400 - 50 =$ _____ 4. $170 + 220 =$ _____	5. $\begin{array}{r} 70 \\ -\ 30 \\ \hline \end{array}$ 6. $\begin{array}{r} 190 \\ 80 \\ +\ 60 \\ \hline \end{array}$	7. $\begin{array}{r} 330 \\ \times\ 40 \\ \hline \end{array}$ 8. $30\overline{)1,020}$

Time finished: _____

Scores:

Even Numbers	Easy Fives	Easy Tens
_____ no. right	_____ no. right	_____ no. right
_____ no. wrong	_____ no. wrong	_____ no. wrong

Which kinds of numbers are easiest for you to use? Write some problems showing those numbers. Find the answers to those problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Easy Evens

Practice figuring with even numbers. Do these problems as quickly as you can. Write the time when you start and finish. Then score yourself.

Time started: _____

1. $\begin{array}{r} 2 \\ 8 \\ +\,4 \\ \hline \end{array}$

2. $\begin{array}{r} 14 \\ 22 \\ +\;\;6 \\ \hline \end{array}$

3. $\begin{array}{r} 214 \\ 20 \\ +848 \\ \hline \end{array}$

4. $\begin{array}{r} 2{,}682 \\ 4{,}800 \\ +6{,}048 \\ \hline \end{array}$

5. $\begin{array}{r} 8 \\ -\,6 \\ \hline \end{array}$

6. $\begin{array}{r} 28 \\ -12 \\ \hline \end{array}$

7. $\begin{array}{r} 344 \\ -288 \\ \hline \end{array}$

8. $\begin{array}{r} 6{,}462 \\ -2{,}124 \\ \hline \end{array}$

9. $\begin{array}{r} 46 \\ \times\;\;4 \\ \hline \end{array}$

10. $\begin{array}{r} 12 \\ \times 14 \\ \hline \end{array}$

11. $\begin{array}{r} 224 \\ \times\;62 \\ \hline \end{array}$

12. $\begin{array}{r} 8{,}482 \\ \times\;\;\;28 \\ \hline \end{array}$

13. $4\overline{)16}$

14. $14\overline{)126}$

15. $8\overline{)24}$

16. $28\overline{)5{,}628}$

17. $2+68=$

18. $46-24=$

19. $300\times4=$

20. $128\div4=$

Time finished: _____

Score:

_____ no. right

_____ no. wrong

Bonus: Beat your time. Get another copy of this worksheet. Do the problems again in less time.

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Subject: _____ Name: _____

Period: _____ Date: _____

Easy Fives

Practice figuring with easy fives. Do these problems as quickly as you can. Write the time when you start and finish. Then score yourself.

Time started: _____

1. $\begin{array}{r} 5 \\ +\,5 \\ \hline \end{array}$

2. $\begin{array}{r} 50 \\ +\,85 \\ \hline \end{array}$

3. $\begin{array}{r} 4{,}055 \\ +\,15{,}250 \\ \hline \end{array}$

4. $\begin{array}{r} 25 \\ 150 \\ 5 \\ +\,6{,}015 \\ \hline \end{array}$

5. $\begin{array}{r} 5 \\ -\,5 \\ \hline \end{array}$

6. $\begin{array}{r} 85 \\ -\,15 \\ \hline \end{array}$

7. $\begin{array}{r} 345 \\ -\,170 \\ \hline \end{array}$

8. $\begin{array}{r} 10{,}000 \\ -\,5{,}550 \\ \hline \end{array}$

9. $\begin{array}{r} 5 \\ \times\,5 \\ \hline \end{array}$

10. $\begin{array}{r} 15 \\ \times\,5 \\ \hline \end{array}$

11. $\begin{array}{r} 145 \\ \times\,25 \\ \hline \end{array}$

12. $\begin{array}{r} 2{,}505 \\ \times\,55 \\ \hline \end{array}$

13. $5\overline{)5}$

14. $15\overline{)30}$

15. $25\overline{)575}$

16. $5\overline{)15{,}355}$

17. $15+20=$

18. $525-12=$

19. $15\times5=$

20. $755\div5=$

Time finished: _____

Score:

_____ no. right

_____ no. wrong

Bonus: Beat your time. Get another copy of this worksheet. Do the problems again in less time.

E16

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Subject: _____ Name: _____

Period: _____ Date: _____

Easy Tens

Practice figuring with easy tens. Do these problems as quickly as you can. Write the time when you start and finish. Then score yourself.

Time started: _____

1. 20 + 50 + 10

2. 260 + 900

3. 7,780 + 2,000

4. 12,320,000 + 5,150,250

5. 60 − 20

6. 480 − 240

7. 9,000 − 600

8. 10,470,800 − 8,355,250

9. 100 × 10

10. 220 × 100

11. 3,450 × 200

12. 15,570,200 × 20

13. $40\overline{)80}$

14. $60\overline{)540}$

15. $70\overline{)9,100}$

16. $300\overline{)402,000}$

17. 10 + 30 + 40 =

18. 660 − 30 =

Time finished: _____

Score:

_____ no. right

_____ no. wrong

19. 80 × 20 =

20. 1,200 ÷ 20 =

Bonus: Beat your time. Get another copy of this worksheet. Do the problems again in less time.

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Subject: _____ Name: _____

Period: _____ Date: _____

Your Easy Numbers

Find out what numbers are easier for you to handle. Do these problems. Check your answers.

A. Easy Evens

1. $122 + 424$

2. $346 - 184$

3. 202×28

4. $4\overline{)28}$

Score: _____ no. right

B. Easy Fives

1. $3{,}525 + 5{,}605$

2. $715 - 585$

3. $5{,}595 \times 25$

4. $55\overline{)5{,}775}$

Score: _____ no. right

C. Easy Tens

1. $13{,}890{,}000 + 10{,}003{,}970$

2. $710 - 680$

3. 170×20

4. $60\overline{)1{,}800}$

Score: _____ no. right

Look at your scores. What kinds of numbers are easier for you to:

1. add? _____

2. subtract? _____

3. multiply? _____

4. divide? _____

Use those kinds of numbers when you estimate.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 2: Estimation Check

Finish writing each kind of easy numbers. Then write math problems for them. Use numbers that have two or more digits. Find the answers to your problems.

1. Easy Evens 2 4 6 _ _ _ _ _ _ _ _ _ _ _ _ _

Add: **Subtract:** **Multiply:** **Divide:**

2. Easy Fives 5 10 15 _ _ _ _ _ _ _ _ _ _ _ _ _

Add: **Subtract:** **Multiply:** **Divide:**

3. Easy Tens 10 20 30 _ _ _ _ _ _ _ _ _ _ _ _ _

Add: **Subtract:** **Multiply:** **Divide:**

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 3: Getting Close Estimates

A. Round these numbers to the nearest easy numbers.

1. Nearest even numbers

	Down		Up		Down		Up
a.	_____	←3→	_____	d.	_____	←59→	_____
b.	_____	←7→	_____	e.	_____	←121→	_____
c.	_____	←13→	_____	f.	_____	←2,567→	_____

2. Nearest easy five

a. 3→ _____ d. 54→ _____

b. 7→ _____ e. 286→ _____

c. 17→ _____ f. 1,364→ _____

3. Nearest easy ten

a. 4→ _____ d. 196→ _____

b. 12→ _____ e. 2,788→ _____

c. 38→ _____ f. 1,799→ _____

B. Round the numbers in these problems. Then estimate their answers.

1. Round to even numbers

```
  89   ----------
+ 27   ----------
       ----------  estimate
```

2. Round to easy fives

```
  66   ----------
- 57   ----------
       ----------  estimate
```

3. Round to easy tens

```
  899  ----------
x  19  ----------
       ----------  estimate
```

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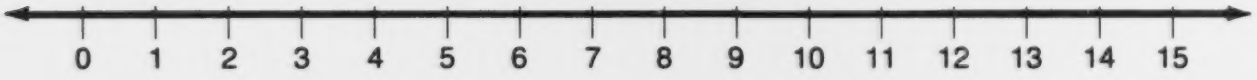
Subject: _____ Name: _____

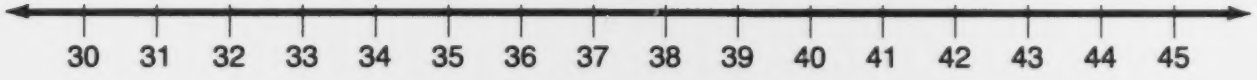
Period: _____ Date: _____

Which Is Nearest?

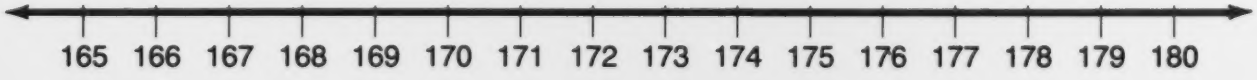
What easy numbers are nearest the numbers listed below? Write the nearest easy evens, easy five, and easy ten. (The first is done.)



Number	Nearest Easy Evens			Nearest Easy Five	Nearest Easy Ten
1. 3 →	2	or	4	5	10
2. 7 →		or			
3. 13 →		or			
4. 9 →		or			
5. 11 →		or			



Number	Nearest Easy Evens			Nearest Easy Five	Nearest Easy Ten
6. 31 →		or			
7. 41 →		or			
8. 37 →		or			
9. 43 →		or			
10. 33 →		or			



Number	Nearest Easy Evens			Nearest Easy Five	Nearest Easy Ten
11. 167 →		or			
12. 171 →		or			
13. 179 →		or			
14. 169 →		or			
15. 173 →		or			

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Subject: _____ Name: _____

Period: _____ Date: _____

Estimating with Easy Evens

A. Round these numbers up and down to the nearest even numbers. (The first is done as an example.)

	Down		Up		Down		Up
1.	6	←7→	8	5.		←121→	
2.		←3→		6.		←339→	
3.		←13→		7.		←1,467→	
4.		←19→		8.		←20,583→	

B. Circle the numbers in these word problems. Round the odd numbers to even numbers and finish writing the math problems. (The first is started.)

1. Maury has a part-time job. On Monday she earned (\$17.) On Tuesday she earned (\$22.) Then on Friday she earned (\$15.) How much did Maury earn in all?

$ 18 Monday
_____ Tuesday
\+ _____ Friday
_____ in all

2. The juniors at West High sponsored a dance. The students paid \$467 in expenses. They collected \$635 in ticket and food sales. How much money did the students make?

$ _____ collected
\− _____ expenses
_____ amount made

3. Phil ran in an 8 mile race. He ran it in 37 minutes. How many minutes did he average per mile?

_____ minutes per mile
_____ miles) _____ minutes

4. Jeff buys 5 pounds of fruit. It costs \$.69 a pound. How much does he pay?

$ _____ a pound
× _____ pounds
_____ total cost

Bonus: Find the estimates to the word problems. Do the math problems.

195

E22

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Subject: _____ Name: _____

Period: _____ Date: _____

Estimating with Easy Fives

A. Round these numbers to the nearest easy five. (The first is done as an example.)

1. 3 → 5
2. 7 → _____
3. 1 → _____
4. 89 → _____
5. 11 → _____
6. 26 → _____
7. 47 → _____
8. 104 → _____
9. 566 → _____
10. 372 → _____
11. 618 → _____
12. 1,394 → _____
13. 7,609 → _____
14. 9,252 → _____
15. 6,823 → _____
16. 12,644 → _____
17. 85,581 → _____
18. 92,638 → _____
19. 503,272 → _____
20. 674,257 → _____

B. Round the numbers in these problems to the nearest easy five. Then do the problems that have the easy fives and find the *estimates*.

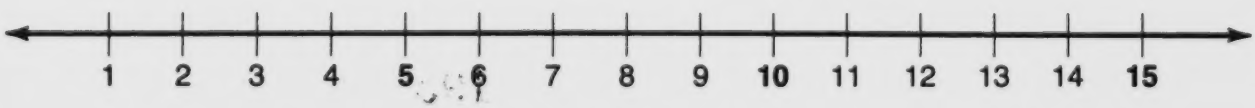
1.
```
  17          15
  22          ----
+  4        +----
----          ----
actual answer     estimate
```

2.
```
  263          ----
- 74          -----
----          ----
actual answer     estimate
```

3.
```
  563          ----
x   6          x---
----          ----
actual answer     estimate
```

4.
```
actual answer          estimate
-------          ----------
7 | 51          ------|----
                       ------
```

Bonus: How close are your estimates to the actual answers? Do the problems that have the actual numbers. Find the actual answers.



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Subject: _____ Name: _____

Period: _____ Date: _____

Estimating with Easy Tens

A. Round these numbers to the nearest easy ten. (The first is done as an example.)

1. 9 → 10
2. 4 → _____
3. 5 → _____
4. 67 → _____
5. 13 → _____
6. 29 → _____
7. 56 → _____
8. 171 → _____
9. 898 → _____
10. 735 → _____
11. 346 → _____
12. 3,202 → _____
13. 7,777 → _____
14. 6,044 → _____
15. 4,868 → _____
16. 12,301 → _____
17. 58,623 → _____
18. 34,345 → _____
19. 826,428 → _____
20. 652,792 → _____

B. Round the numbers in these problems to the nearest easy ten. Then do the problems that have the easy tens and find the *estimates*.

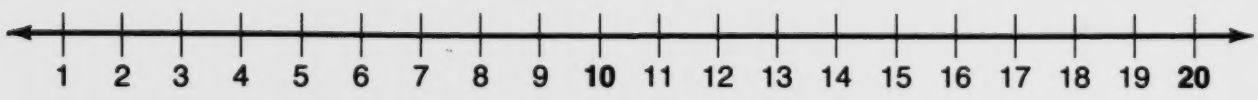
1.
```
  49          ----------
  37          ----------
+ 11        +  ----------
--------      ----------
```
actual answer — estimate

2.
```
  112         ----------
- 53        -  ----------
---------     ----------
```
actual answer — estimate

3.
```
  283         ----------
x  73       x  ----------
---------     ----------
---------
---------
```
actual answer — estimate

4.
```
          ----------
93 | 1,799
```
actual answer — estimate

Bonus: See how close your estimates are. Do the problems that have the actual numbers and find the actual answers.



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Subject: _____ Name: _____

Period: _____ Date: _____

Which Easy Numbers?

Round these numbers to the nearest easy _____.
Then find the estimate for each problem.

		Estimates
1.	23 +41	---------- + ----------
2.	138 − 77	---------- − ----------
3.	35 ×11	---------- × ----------
4.	13 ⟌667	--------- ---- ⟌----------
5.	102 × 87	---------- × ----------
6.	491 286 +711	---------- ---------- + ----------

7. 53 + 68 + 101 = _____ → ---------- + ---------- + ---------- = ----------
estimate

8. 1,289 − 789 = _____ → ---------- − ---------- = ----------
estimate

9. 12,432 ÷ 45 = _____ → ---------- ÷ ---------- = ----------
estimate

10. 4,007 × 552 = _____ → ---------- × ---------- = ----------
estimate

11. Stan is a carpenter. He worked 33 hours last week. He earns $14 per hour. How much did he earn last week?

------ hours × ------ per hour = _____ → ---------- × ---------- = ----------
estimate

Bonus: Find out how close your estimates are. Do the actual math problems.

Note to the teacher: Finish writing the directions at the top of the page to fit individual student's needs.

E25

Rounding to the nearest easy number/***ESTIMATION***, Unit 3, pp. 14–16.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 3: Estimation Check

Estimate the answers to these math problems.

1. Round to the nearest even numbers.

		Estimates
a.	1,843 +6,555	---------- + ----------
b.	9,487 −4,803	---------- − ----------
c.	2,003 × 19	---------- × ----------
d.	25⟌441	---- ⟌---------

e. Jon took out a student loan. He borrowed $2,755. He's paid back $377. How much more must Jon pay back on his loan?

$2,755 − $377 = _____

-------- − -------- = _____
estimate

2. Round to the nearest easy five.

		Estimates
a.	6,896 −1,001	---------- − ----------
b.	2,223 × 47	---------- × ----------
c.	72⟌2,998	---- ⟌---------
d.	3,417 +18,534	---------- + ----------

e. Moody collected unemployment insurance for 13 weeks. He received $119 per week. How much unemployment insurance did he collect in all?

$119 × 13 weeks = _____

-------- × -------- = _____
estimate

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Name: _____

Unit 3: Estimation Check

3. Round to the nearest easy ten.

		Estimates
a.	212 ⟌ 4,909	---- ⟌ ---------
b.	3,566 − 1,705	---------- − ----------
c.	28,052 + 57,819	---------- + ----------
d.	8,934 × 37	---------- × ----------

e. Darolyn figures her monthly time sheet. This month she worked these hours for each of her jobs: 63 hours—typing; 49 hours—filing; 12 hours—copying; and 16 hours—at the reception desk. How many hours did she work altogether?

63 hours + 49 hours + 12 hours + 16 hours = _____

---------- + ---------- + ---------- + ---------- = _____

estimate

4. Make up some problems of your own. Then round them to easy numbers and estimate their answers.

a. Round to the nearest even number.

Problem	Estimate

b. Round to the nearest easy five.

Problem	Estimate

c. Round to the nearest easy ten.

Problem	Estimate

Bonus: Find out how close your estimates are. Do the math problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 4: Easy Fractions

A. Round these fractions to the nearest $\frac{1}{4}$, $\frac{1}{2}$, or $\frac{3}{4}$.

1. $\frac{1}{3} \rightarrow \frac{1}{4}$
2. $\frac{2}{3} \rightarrow$
3. $\frac{4}{5} \rightarrow$
4. $\frac{1}{8} \rightarrow$
5. $\frac{4}{7} \rightarrow$
6. $\frac{1}{5} \rightarrow$
7. $\frac{5}{8} \rightarrow$
8. $\frac{6}{7} \rightarrow$

B. Round these fractions or mixed numbers to the nearest whole number.

1. $2\frac{1}{4} \rightarrow 2$
2. $\frac{7}{8} \rightarrow$
3. $4\frac{2}{3} \rightarrow$
4. $10\frac{1}{8} \rightarrow$
5. $\frac{3}{4} \rightarrow$
6. $1\frac{3}{4} \rightarrow$
7. $5\frac{1}{5} \rightarrow$
8. $9\frac{4}{5} \rightarrow$

C. *Estimate* answers to these problems.

1. $\frac{1}{2}$ of 247 = 123, 124, or 125
2. $\frac{1}{4}$ of 12 =
3. $\frac{3}{4}$ of 70 =
4. $\frac{2}{3}$ of 124 =
5. $\frac{1}{5}$ of 28 =
6. $\frac{1}{2}$ of 13 =
7. $\frac{4}{7}$ of 100 =
8. $\frac{1}{4}$ of 39 =
9. $\frac{3}{5}$ of 80 =
10. $\frac{3}{4}$ of 200 =

201

E28

Unit pre-post test/***ESTIMATION***, Unit 4, pp. 19–25.

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Subject: _____ Name: _____

Period: _____ Date: _____

Estimating $\frac{1}{2}$ of an Amount

Estimate answers to these word problems. First, round the whole numbers to a nearest even number. Then find $\frac{1}{2}$ of that amount to get the estimate. (The first is started.)

1. Fran and Tina have a part-time business. They clean private homes. They earn $127 every week. How much is each woman's share of the earnings?

   $127 → $126

   2 ⌐ $126 ¬ estimate

2. Jake uses his bike to get around. He can travel 23 miles in one hour. How many miles can he travel in $\frac{1}{2}$ an hour?

   23 miles → _____

   ⌐ ¬ estimate

3. Dixon Farms has 154 workers. 83 workers want to join a union. Of the other 71 workers, $\frac{1}{2}$ don't want a union and $\frac{1}{2}$ are undecided. How many workers are still making up their minds?

   71 workers → _____

   ⌐ ¬ estimate

4. Suzy's child is 39 inches long. He was $\frac{1}{2}$ that length at birth. How many inches long was he at birth?

   39 inches → _____

   ⌐ ¬ estimate

5. Mel and Dawn Ronzo each pay $\frac{1}{2}$ of the rent. Their rent is $675 per month. How much does Dawn pay?

   $675 → _____

   ⌐ ¬ estimate

6. Laurel Company earned $1,282,567 last year. It had earned $\frac{1}{2}$ of that amount by July. How much did the company earn by that month?

   $1,282,567 → _____

   ⌐ ¬ estimate

Bonus: Find how close your estimates are. Next to your estimates, do the actual math problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Estimating $\frac{1}{4}$ of an Amount

Estimate answers to these problems. Do this:

Step 1: If the whole number is odd, round it to the nearest even number. Find $\frac{1}{2}$ of it.

Step 2: If the answer is odd, round it to the nearest even number. Then find $\frac{1}{2}$ of it to get the estimate.

1. Pam runs 4 days every week. She runs the same number of miles daily. Last week she ran a total of 27 miles. How many miles did she run daily?

   27 miles → 28

   Step 1 ⌐ **Step 2** ⌐ estimate

2. Ron's take-home pay is $856 per month. He sends $\frac{1}{4}$ of his pay to his parents. How much money does he send?

   _____ → _____

   Step 1 ⌐ **Step 2** ⌐ estimate

3. Rocky weighs 215 pounds. He must lose $\frac{1}{4}$ of that weight. How many pounds must Rocky lose?

   _____ → _____

   Step 1 ⌐ **Step 2** ⌐ estimate

4. Ms. Ito has 23 students in her second period class. $\frac{1}{4}$ of those are in a job-training program. How many students are in the program?

   _____ → _____

   Step 1 ⌐ **Step 2** ⌐ estimate

5. The Jeans Store has a sale. All prices are $\frac{1}{4}$ off. The regular price on green jeans is $33. How much will be taken off that price?

   _____ → _____

   Step 1 ⌐ **Step 2** ⌐ estimate

6. Nick buys a used car for $1,439. He pays $\frac{1}{4}$ of that amount in cash. How much does he pay in cash?

   _____ → _____

   Step 1 ⌐ **Step 2** ⌐ estimate

Bonus: Find out how close your estimates are to the actual answers. On another sheet of paper, do the actual math problems and find the actual answers.

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Subject: _____ Name: _____

Period: _____ Date: _____

Estimating $\frac{3}{4}$ of an Amount

Estimate answers to these problems. Do this:

Step 1: If the amount is an odd number, round it to an even number. Then find $\frac{1}{2}$ of it.

Step 2: If your answer is an odd number, round it to an even number. Find $\frac{1}{2}$ of it.

Step 3: Add your two answers to get the estimate.

1. A political group is trying to raise $3,800. It has raised $\frac{3}{4}$ of that amount. How much money has the group raised so far?

Step 1 ⌐‾‾‾

Step 2 ⌐‾‾‾

Step 3 ----------

\+ ----------

estimate

2. Isidro drives a cab. He drove 207 miles today. He drove $\frac{3}{4}$ of those miles going to the airport. How many miles altogether did he drive to the airport?

Step 1 ⌐‾‾‾

Step 2 ⌐‾‾‾

Step 3 ----------

\+ ----------

estimate

3. Jolene must gain weight. She must eat 2,400 calories every day. Today she ate only $\frac{3}{4}$ of the calories. How many calories did she eat?

Step 1 ⌐‾‾‾

Step 2 ⌐‾‾‾

Step 3 ----------

\+ ----------

estimate

4. Elsie is saving money to buy a winter coat. She needs $125 for the coat. So far, she's saved $\frac{3}{4}$ of that amount. How much money does she have?

Step 1 ⌐‾‾‾

Step 2 ⌐‾‾‾

Step 3 ----------

\+ ----------

estimate

Bonus: Find out how close your estimates are. Do the actual math problems.

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Subject: _____ Name: _____

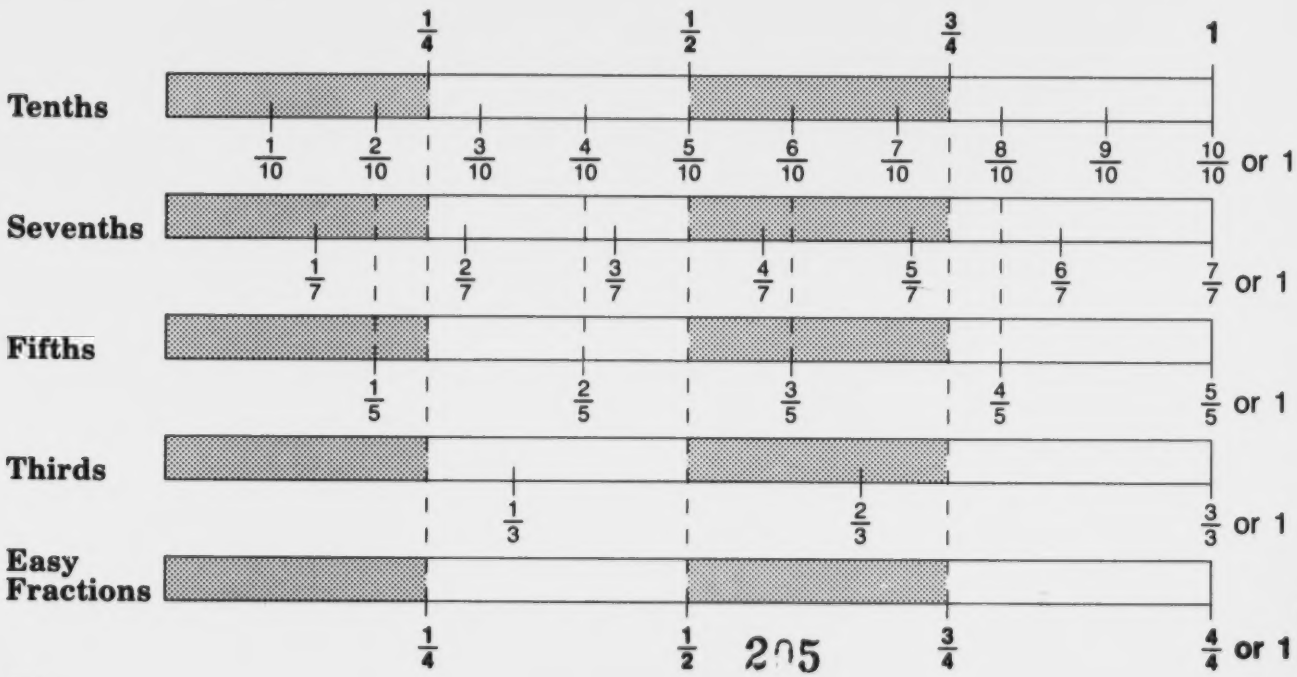
Period: _____ Date: _____

Rounding to Easy Fractions

Round these fractions to a close easy fraction. If you can, round up and down. Use the fraction rulers below to help you.

	Down		Up
1.	_____	$\frac{1}{3}$	_____
2.	_____	$\frac{3}{5}$	_____
3.	_____	$\frac{6}{7}$	_____
4.	_____	$\frac{5}{7}$	_____
5.	_____	$\frac{3}{10}$	_____
6.	_____	$\frac{4}{7}$	_____
7.	_____	$\frac{9}{10}$	_____
8.	_____	$\frac{2}{5}$	_____
9.	_____	$\frac{2}{3}$	_____

	Down		Up
10.	_____	$\frac{1}{7}$	_____
11.	_____	$\frac{2}{10}$	_____
12.	_____	$\frac{4}{5}$	_____
13.	_____	$\frac{1}{5}$	_____
14.	_____	$\frac{7}{10}$	_____
15.	_____	$\frac{2}{7}$	_____
16.	_____	$\frac{3}{7}$	_____
17.	_____	$\frac{1}{10}$	_____
18.	_____	$\frac{4}{10}$	_____



E32

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Subject: _____ Name: _____

Period: _____ Date: _____

More or Less

Estimate answers to these problems. Round fractions to close easy fractions. Round whole numbers to nearest even numbers. Show all your work.

1. **Problem** **Work**

a. What's your estimate? _____

b. Is it more or less than the actual answer? _____

c. Why? _____

---

2. **Problem** **Work**

a. What's your estimate? _____

b. Is it more or less than the actual answer? _____

c. Why? _____

---

3. **Problem** **Work**

a. What's your estimate? _____

b. Is it more or less than the actual answer? _____

c. Why? _____

Bonus: See how close your estimates are. Find the actual answers to those problems.

Note to the teacher: Write problems (such as: $\frac{2}{3}$ of 69 =) that can reinforce the student's specific needs.

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Subject: _____ Name: _____

Period: _____ Date: _____

Estimating with Easy Fractions

Estimate answers to these problems. Round fractions to easy fractions. Round whole numbers to the nearest even number. Show your work.

1. $\frac{2}{5}$ of 13 = _____ estimate

2. $\frac{6}{7}$ of 28 = _____ estimate

3. $\frac{7}{10}$ of 131 = _____ estimate

4. $\frac{2}{3}$ of 2,891 = _____ estimate

5. Tom worked 5 days. He earned $147 altogether. How much did Tom earn each day?

6. Members of the Asian Youth Club make 350 egg rolls. They sell $\frac{7}{10}$ of them at a food sale. How many egg rolls is that?

7. The Neighborhood Actors put on a play. They make $1,095. They donate $\frac{3}{5}$ of that to a hospital. How much do they donate?

8. Freda is riding a 120 mile bike course. She travels $\frac{4}{7}$ of the course. How many miles is that?

Bonus: See how close your estimates are. Find the actual answers to the problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

A Closer Estimate

You can get a very close estimate of an actual answer by using easy fractions. For example, suppose you're estimating $\frac{2}{5}$ of 32. Here's what to do:

$\frac{2}{5}$ of 32 = _____ estimate

Step 1: Round $\frac{2}{5}$ down *and* up to a close easy fraction:

$\frac{1}{4} \leftarrow \frac{2}{5} \rightarrow \frac{1}{2}$

Step 2: Make an estimate with each easy fraction:

$\frac{1}{4}$ of 32 = **8** $\frac{1}{2}$ of 32 = **16**

Step 3: Add the two estimates:

16 + 8 = 24

Step 4: Now divide that answer by 2:

24 ÷ 2 = 12 estimate

You'll get a very close estimate to the actual answer. (The actual answer is $12\frac{4}{5}$.)

Now, follow those steps and estimate answers to these problems. Show all your work on this paper.

1. $\frac{2}{3}$ of 40 = _____ estimate

2. $\frac{3}{7}$ of 128 = _____ estimate

Bonus: Find out how close your estimates are to the actual answers. Do the math problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Making Closer Estimates

Estimate answers to these word problems. Then make an even closer estimate for each problem. Show all your work on this page.

1. Win, Charles, and Leah go out to dinner. Their check is $39. Each person pays $\frac{1}{3}$ of the check. How much does Charles pay?

   a. Estimate: _____ b. Closer Estimate: _____

2. A flower shop must fill an order for 112 dozen roses. It has only $\frac{3}{7}$ of that amount in the shop. How many dozen roses does it have?

   a. Estimate: _____ b. Closer Estimate: _____

3. Mrs. Han buys a new car. It costs $8,236. She pays part of that cost each month. So far she's paid $\frac{3}{5}$ of the cost. How much has she paid?

   a. Estimate: _____ b. Closer Estimate: _____

Bonus:
1. Find out how close your estimates are to the actual answers. Do the actual math problems.
2. Get other math problems like the ones on this page. Using easy fractions, make very close estimates to those problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Estimating with Mixed Numbers

Estimate answers to these problems. Remember to round *one* of the fractions to the next whole number. (The first problem is done.)

1. $2\frac{1}{8}$ yards → 2 yards
   $+\ 4\frac{2}{3}$ yards → $+\ 4\frac{2}{3}$ yards
   $6\frac{2}{3}$ yards

2. $14\frac{6}{7}$ feet → _____ feet
   $-\ 5\frac{2}{5}$ feet → $-$ _____ feet
   _____ feet

3. $26\frac{5}{6}$ inches → _____ inches
   $+\ 13\frac{1}{7}$ inches → $+$ _____ inches
   _____ inches

4. $110\frac{2}{3}$ miles → _____ miles
   $+\ 65\frac{4}{5}$ miles → $+$ _____ miles
   _____ miles

5. $181\frac{1}{6}$ tons → _____ tons
   $-\ 57\frac{7}{8}$ tons → $-$ _____ tons
   _____ tons

6. $71\frac{4}{6}$ meters → _____ meters
   $-\ 35\frac{3}{5}$ meters → $-$ _____ meters
   _____ meters

7. 209 tons → _____ tons
   $43\frac{1}{3}$ tons → _____ tons
   $+\ 81\frac{2}{7}$ tons → $+$ _____ tons
   _____ tons

8. $62\frac{1}{5}$ feet → _____ feet
   $18\frac{3}{8}$ feet → _____ feet
   $+\ 41$ feet → $+$ _____ feet
   _____ feet

9. $85\frac{2}{5}$ pounds → _____ pounds
   $-\ 69\frac{2}{3}$ pounds → $-$ _____ pounds
   _____ pounds

10. $126\frac{7}{8}$ grams → _____ grams
    $+\ 27\frac{1}{3}$ grams → $+$ _____ grams
    _____ grams

Bonus: Find out how close your estimates are to the actual answers. Do the actual math problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 4: Estimation Check

Estimate answers to these word problems. Show all your work.

1. Dan earns $370. He saves $\frac{1}{5}$ of it. How much does he save?

   a. Your estimate: _____

   b. Is your estimate more or less than the actual answer?

   _____

   c. Why? _____

   _____

2. Joan delivers bread to stores. One store wants 45 loaves of bread. $\frac{2}{3}$ of those loaves must be white bread. How many loaves of white bread is that?

   a. Your estimate: _____

   b. Is your estimate more or less?

   _____

   c. Why? _____

   _____

3. Ace Computers has 151 workers. $\frac{3}{5}$ of the workers own stock in the company. How many workers own stock in Ace Computers?

   a. Your estimate: _____

   b. Is your estimate more or less?

   _____

   c. Why? _____

   _____

4. Sue is making shelves. She buys a board that's $2\frac{5}{8}$ feet long and one that's $5\frac{1}{8}$ feet long. How many feet does she buy in all?

   a. Your estimate: _____

   b. Is your estimate more or less?

   _____

   c. Why? _____

   _____

Bonus: Find out how close your estimates are to the actual answers. Do the actual math problems.

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Unit review/***ESTIMATION***, Unit 4, pp. 19–25.

Subject: _____ Name: _____

Period: _____ Date: _____

Unit 5: Easy Decimals, Easy Percents

Estimate answers to these problems. Show your work.
You may need another sheet of paper.

1. a. .25 of 73 = _____

   b. .50 of 97 = _____

   c. .75 of 110 = _____

   d. .33 of 50 = _____

   e. .47 of 281 = _____

   f. .76 of 439 = _____

2. a. 25% of 70 = _____

   b. 50% of 267 = _____

   c. 75% of 3,000 = _____

   d. 28% of 532 = _____

   e. 48% of 97 = _____

   f. 77% of 134 = _____

3. Lin buys a coat on sale. She pays 25% less than the regular price. The regular price is $85. How much does Lin pay?

   _____

4. Eric buys a used saxophone on sale. Its sale price is 40% less than the regular price. The regular price is $300. How much is the sale price?

   _____

5. Don makes jewelry to sell. Last week he made 50 rings. This week he makes 25% more rings. How many rings does he make this week?

   _____

6. Zeon borrows money from a bank. He must repay $12,500. He pays 48% of that amount. How much is that?

   _____

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Subject: _____ Name: _____

Period: _____ Date: _____

Easy Fractions, Easy Decimals

Which Easy Fraction?

Write these decimals as easy fractions. (The first two are done.)

1. $.75 $\frac{3}{4}$ of a dollar
2. 4.50 ounces 4½ ounces
3. .25 yards _____
4. 17.5 miles _____
5. 21.5 quarts _____
6. 2.25 cups _____
7. 124.5 feet _____
8. 3.75 hours _____
9. 13.25 tons _____
10. 18.25 meters _____
11. $.50 _____
12. 1.75 grams _____
13. 8.25 liters _____
14. 3.5 tablespoons _____
15. 115.50 kilograms _____
16. 313.75 pounds _____
17. 458.25 gallons _____

Which Easy Decimal?

Write these fractions as easy decimals.

1. $\frac{1}{4}$ _____
2. $\frac{3}{4}$ _____
3. $\frac{1}{2}$ _____
4. $7\frac{3}{4}$ _____
5. $9\frac{1}{4}$ _____
6. $2\frac{1}{2}$ _____
7. $5\frac{3}{4}$ _____
8. $13\frac{1}{2}$ _____
9. $18\frac{1}{2}$ _____
10. $44\frac{3}{4}$ _____
11. $67\frac{1}{4}$ _____
12. $132\frac{3}{4}$ _____
13. $321\frac{1}{4}$ _____
14. $604\frac{1}{2}$ _____
15. $1{,}213\frac{1}{4}$ _____
16. $9{,}941\frac{3}{4}$ _____
17. $20{,}426\frac{1}{2}$ _____

Bonus: Write word problems using easy decimals. Give them to a classmate to solve. Then check that person's answers.

213

E40

Recognizing easy decimals and their easy fraction equivalents/***ESTIMATION***, Unit 5, p. 26.

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Subject: _____ Name: _____

Period: _____ Date: _____

Estimating with Easy Decimals

Estimate answers to these problems. Remember to round odd numbers to a nearest even number. Show your work. (If you need help, look on page 27 or pages 19 to 21 of *Estimation*.)

Estimates

1. a. .50 of 43 = _____
   b. .25 of 43 = _____
   c. .75 of 43 = _____

2. a. .50 of 111 = _____
   b. .25 of 111 = _____
   c. .75 of 111 = _____

3. a. .50 of 347 = _____
   b. .25 of 347 = _____
   c. .75 of 347 = _____

Estimates

4. a. .50 of 213 = _____
   b. .25 of 213 = _____
   c. .75 of 213 = _____

5. a. .50 of 6 = _____
   b. .25 of 6 = _____
   c. .75 of 6 = _____

6. a. .50 of $763 = _____
   b. .25 of $763 = _____
   c. .75 of $763 = _____

Bonus: Find out how close your estimates are to the actual answers. Do the actual math problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Estimating with Easy Percents

A. Write these percents as easy decimals and easy fractions.

	Decimals	Fractions
1. 175%	1.75	$1\frac{3}{4}$
2. 50%		
3. 25%		
4. 150%		
5. 75%		
6. 125%		

B. Round the amounts to an easy number. Then estimate answers to these problems.

1. 25% of 161 = 40

$2\overline{)160}$ $\quad 80$ $\qquad$ $2\overline{)80}$ $\quad 40$

2. 50% of 27 = _____

3. 75% of 182 = _____

4. 50% of 329 = _____

5. 75% of 1,289 = _____

6. 25% of 20,041 = _____

7. 75% of $129.75 = _____

8. 25% of $36.42 = _____

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Name: _____

Estimating with Easy Percents

C. Estimate answers to these word problems. Show all your work.

1. A camera is on sale for 25% off. Its regular price is $199. How much is the sale price?

2. 3,463 people live in West County. 50% of them own cars. How many people don't own cars?

3. Ellie borrowed money from a bank. She must repay $3,500. She has already paid 75% of that amount. How much more will she pay?

4. Mai pays $260 for rent. Her rent will be increased by 25%. How much will it be?

5. Dawn typed 40 words per minute. She began practicing every day. Now she can type 50% more words. How many words per minute can she now type?

6. Cal earns $160 a week. He gets a new job. It pays 75% more. How much does Cal now earn?

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Subject: _____ Name: _____

Period: _____ Date: _____

Estimating with Easy 10%

You'll often have to estimate 5%, 10%, or 15% of an amount. For example: figuring what a tip should be. Here's how to estimate those answers.

Estimating 10% of an Amount

Step 1: Find the decimal point that's in the amount. Move it one digit to the left.

$8.63 → $.863

Step 2: Round your answer to the nearest hundredth.

$.863 → $.86

Now estimate 10% of these amounts:

1. 76 7.6
2. 3 _____
3. $8.75 _____
4. $1.99 _____

Estimating 5% of an Amount

Step 1: Find 10% of the amount.

$8.63 → $.86 (10%)

Step 2: Round the answer to an easy number if you wish. Then divide it in half.

$.86 ÷ 2 = $.43 (5%)

Now estimate 5% of these amounts:

1. 24 _____
2. 193 _____
3. $3.75 _____
4. $18.24 _____

Estimating 15% of an Amount

Step 1: Find 10% of the amount.

$8.63 → $.86 (10%)

Step 2: Find 5% of the amount.

$.86 → $.43 (5%)

Step 3: Round the two answers to easy numbers if you wish. Then add them.

$.86 (10%) + $.43 (5%) = $1.29 (15%)

Now estimate 15% of these amounts:

1. $12.76 _____
2. $388.99 _____
3. 680 _____
4. 1,485 _____

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Subject: _____ Name: _____

Period: _____ Date: _____

Rounding Decimals and Percents

Round these decimals and percents to the

nearest _____.

Then find the estimate for each problem.

		Estimates		Estimates
1.	.13 +.17	---------- + ----------	2. 89% −61%	---------- − ----------
3.	12.37 − 8.14	---------- − ----------	4. 53% +24%	---------- + ----------
5.	39.42 +16.29	---------- + ----------	6. 19% +38%	---------- + ----------
7.	102.34 − 89.77	---------- − ----------	8. 101% − 89.8%	---------- − ----------
9.	67.89 242.22 +114.05	---------- ---------- + ----------	10. 49.6% 12.23% +63.81%	---------- ---------- + ----------
11.	200.01 −154.67	---------- − ----------	12. 101.6% − 67.72%	---------- − ----------

Bonus: See how close your estimates are. Find the actual answers to the problems.

Note to the teacher: This worksheet can be used repeatedly to reinforce different skills. Finish the directions to fit individual student's needs.

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Subject: _____ Name: _____

Period: _____ Date: _____

How Much Do You Save?

Look at this sale ad. How much do you save on the items listed below? Round percents to easy percents. Round amounts to easy numbers. Then estimate the answers.

1. A down jacket

40% of $139 = _____ estimate

2. A sleeping bag

_____ of _____ = _____ estimate

3. A swim suit

_____ of _____ = _____ estimate

4. A baseball bat

_____ of _____ = _____ estimate

5. A baseball mitt

_____ of _____ = _____ estimate

6. A pair of swim trunks

_____ of _____ = _____ estimate

Bonus: Do the math problems and find the actual answers.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 5: Estimation Check

Estimate answers to these problems. Show all your work. (The first answer is started for you.)

1. Kim and Nuyen eat dinner in a restaurant. Their bill is $25. Kim pays 60% of the bill. How much does Kim pay?

   Kim pays about _____

2. Sara buys cookies for a party. She buys 21 pounds. A pound costs $.35. How much does she pay altogether?

   _____

3. Maria buys a crib for her baby. It is 33% off the regular price. The regular price is $110. How much does she pay?

   _____

4. Paolo is cooking his special dish. He needs $3\frac{2}{3}$ cups of chicken, 2 cups of ground beef, and $2\frac{1}{3}$ cups of ground pork. How many cups of meat does he need altogether?

   _____

Bonus: See how close your estimates are. Find the actual answers to the problems.

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SOLVING WORD PROBLEMS

Workbook by: Susan D. Echaore / Winifred Ho Roderman

WorkMasters™ by: Gene Karas / Susan D. Echaore / Winifred Ho Roderman

Teacher's Guide by: Katherine D. Perez, Ed.D.
Director, Special Education, Saint Mary's College, Moraga, California

Consultant: Phyllis Kaplan, Ph.D.
Department of Educational Psychology, California State University, Hayward, California

Contents

Teacher's Guide S2–S6
- Teaching Suggestions S2
- Workbook Answer Key S4
- WorkMasters Answer Key S5

WorkMasters S7–S58
Workbook pages for each WorkMaster are listed in parentheses.

Unit 1: A Math Plan of Action S7–S15, S33
- Unit pre-post test S7
- Hard Words *(p. 5)* S8–S9
- The Question Is . . . ? *(p. 5)* S10
- Clues! *(p. 6)* S11
- The Right Facts *(p. 6)* S12–S13
- Unit review: Solving Word Problems *(pp. 4–8)* S14
- A Math Plan of Action for One-Step Word Problems *(pp. 4–8)* S15
- Word Problems Review *(pp. 4–18)* S33

Unit 2: Putting Things Together S16–S24, S33
- Unit pre-post test S16
- Adding Things Together *(p. 10)* S17–S18
- Adding More Things Together *(p. 11)* S19–S20
- Putting the Same Thing Together *(p. 12)* S21–S22
- Unit review: Solving Word Problems *(pp. 9–13)* S23–S24
- Word Problems Review *(pp. 4–18)* S33

Unit 3: Finding Parts of Amounts S25–S33
- Unit pre-post test S25
- Finding What Remains *(p. 15)* S26–S27
- Finding the Difference *(p. 16)* S28–S29
- Finding Parts *(p. 17)* S30–S31
- Unit review: Solving Word Problems *(pp. 14–18)* S32
- Word Problems Review *(pp. 4–18)* S33

Unit 4: More Than One Step S34–S46
- Unit pre-post test S34
- The First Step *(p. 20)* S35–S36
- More Many-Step Problems *(p. 20)* S37
- Practice Estimating *(pp. 19–24)* S38
- Changing Facts *(p. 21)* S39
- Looking for Facts *(p. 22)* S40–S41
- Are the Answers Right? *(p. 23)* S42
- Unit review: Solving Word Problems *(pp. 19–24)* S43–S44
- A Math Plan of Action for Many-Step Word Problems *(pp. 19–24)* S45–S46

Unit 5: Some Special Kinds of Problems S47–S58
- Unit pre-post test S47
- Finding Percents *(pp. 26–28)* S48
- What's the Lower Amount? *(p. 26)* S49
- What's the Higher Amount? *(p. 27)* S50
- More or Less *(pp. 26–27)* S51
- Buying on Time *(p. 28)* S52
- Finding Averages: More Than One Step *(p. 29)* S53
- Finding Averages: One Step Only *(p. 29)* S54
- Unit review: Solving Word Problems *(pp. 25–30)* S55–S56
- In Your Own Words *(pp. 9–30)* S57
- A Math Plan of Action for Many-Step Word Problems *(pp. 25–29)* S45, S58

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SOLVING WORD PROBLEMS Teacher's Guide

by Dr. Katherine D. Perez

OVERVIEW

Solving Word Problems is the fifth workbook in the Janus ***Math in Action: Word Problems*** series. It pulls together all the skills taught in *Math Language*, *Understanding Word Problems*, *Using a Calculator*, and *Estimation*—skills that the students will use to solve word problems.

This workbook specifically teaches strategies (collectively called "A Math Plan of Action") that will help students solve word problems. Students learn to analyze the information in a word problem to choose the right math operation, and they study the math steps required to answer word problems about averages and percents.

OBJECTIVES OF THIS WORKBOOK

Upon completion of this workbook and corresponding WorkMasters, the student will be able to:

- read word problems carefully, extract relevant information, determine the correct math operations, set up and solve the math problems, and check the answers;
- recognize the common formats of word problems;
- construct the math steps for solving word problems about averages and percents;
- write his own word problems;
- apply his learning to everyday situations.

TEACHING SUGGESTIONS

Introducing the Workbook

To introduce the strategies involved in solving word problems, take your students on a walk along a street where they can see people doing different kinds of work. Tell your students to observe these people and write down the specific job that each worker is doing.

Discuss the students' observations in class. Tell them that to complete a task successfully, a worker will use a strategic plan. Get students to think about strategies they would use for some of the jobs they saw. Then help students conclude that solving word problems is similar to completing a job—that is, they can use strategies to help them solve word problems.

Now distribute *Solving Word Problems*. Read the introduction aloud, talk about it, then do the first lesson together.

Review

By the time students have finished the previous four workbooks, they will have developed the skills they will need to solve word problems. Continue reinforcing those skills with plenty of practice and review. You might begin a lesson with a brief drill of math vocabulary, estimation methods, calculator operations, and word-problem components.

Practice

Solving Word Problems uses question-answer patterns to help students analyze the formats of word problems. Give your students word problems from other math books to reinforce those patterns. As extra credit, have your students look through various math books to find word problems that are similar to those in the workbook lesson they are working on; then have them use the question-answer pattern to solve the problems.

Pacing

Allow plenty of time for students to complete a unit. They will need a lot of repetition and application to recognize the patterns and master the strategies. Encourage them always to go at their own pace. Help each student find a challenging working rate.

Real-Life Math

Grounding their studies in reality is a wonderful motivator for special-needs students. You might have students keep journals of math problems they do in their daily routines. Then as a final project, have them write some of their own math problems as word problems.

TEACHING THE UNITS

This section contains brief descriptions of each workbook page and suggested enrichment activities. Corresponding WorkMasters are listed in parentheses after each page description.

Unit 1: A Math Plan of Action

Students learn the "Math Plan of Action"—a sequence of strategies that can help them solve word problems. (Unit pre-post test, S7; unit review, S14; S15; S33)

PAGE 4: **A Math Plan of Action**
Students learn that strategies for solving real-life problems are similar to strategies for solving word problems.

PAGE 5: **What's It All About?**
Students use the first two strategies to help them understand a word problem. (S8–S9; S10)

PAGE 6: **Getting Information**
Students follow the next two strategies to find the information they need to solve a word problem. (S11; S12–S13)

PAGE 7: **Solving the Problem**
Students employ the last two strategies to find the answer to a word problem. If students need to review how to check answers to the four math operations, have them repeat unit 3 of *Using a Calculator*.

PAGE 8: **Math Workout**
Students apply what they learned in this unit. (S14)

Enrichment Activities
- Have students design their own "Math Plan of Action" chart.
- Discuss how following a recipe, fixing a car, sewing a dress, and even getting ready for school involve strategies.

Unit 2: Putting Things Together

Students learn to recognize and analyze some formats of addition and multiplication word problems. (Unit pre-post test, S16; unit review, S23–S24; S33; S57)

PAGE 9: **Putting Things Together**
Students write about real-life situations in which they had to find total amounts of something. Help them conclude that finding a total amount usually involves adding or multiplying.

PAGE 10: **Counting Things**
Students learn that addition word problems require putting different amounts together to get *one* total amount. (S17–S18)

PAGE 11: **More Problems**
Students study addition word problems that add an extra amount to a total amount to get *another* total amount. (S19–S20)

PAGE 12: **Putting the Same Thing Together**
Students learn that multiplication problems require putting the same amount together many times. (S21–S22)

PAGE 13: **Math Workout**
Students apply the Math Plan of Action to solve addition and multiplication word problems. (S23–S24)

Enrichment Activities
- Go grocery shopping in the ads. Students list the items, write down the amount and unit price next to each item, and figure the total cost.
- Have students choose a word problem from a textbook. Ask them to make a drawing, a song, a poem, or a skit about it.

Unit 3: Finding Parts of Amounts

Students learn to recognize and analyze some formats of subtraction and division word problems. (Unit pre-post test, S25; unit review, S32; S33; S57)

PAGE 14: **Finding Parts of Amounts**
Students discuss subtraction and division problems that people encounter in real-life situations.

PAGE 15: **What's Left?**
Students study subtraction word problems that ask for the amount that is left after something is taken away. (S26–S27)

PAGE 16: **What's the Difference?**
Students learn about subtraction word problems that compare two amounts and ask for the difference between those amounts. (S28–S29)

PAGE 17: **How Many Parts?**
Students analyze division word problems that require finding the number of equal parts in a total amount. (S30–S31)

PAGE 17: **How Many Things?**
Students examine division word problems that ask for the number of things in an equal part of a total. (S30–S31)

PAGE 18: **Math Workout**
Students apply the Math Plan of Action to solve subtraction and division word problems. (S32)

Enrichment Activities
- Have students create subtraction word problems around a bank statement, a checkbook register, and a pay stub.
- Bring in a list of annual salaries for different workers. Then have students figure monthly, weekly, and daily wages.

Unit 4: More Than One Step

Students learn to recognize problems that require multiple-step solutions and how to set up each step to find the answer to the problem. (Unit pre-post test, S34; S38; unit review, S43–S44; S45–S46; S57)

PAGE 19: **More Than One Step**
Students discuss real-life problems that have to be solved in steps. They learn to differentiate one-step and many-step problems.

PAGE 20: **What's Missing?**
Students use the Math Plan of Action to solve word problems involving two or more math steps. They learn two more strategies that help them find missing facts in a many-step word problem. If students have been doing their math calculations on paper, encourage them to use their calculators. (S35–S36; S37)

PAGE 21: **Changing Facts**
Students change the facts of word problems into the same units of measure. (S39)

PAGE 22: **Looking for Facts**

Students extract facts from such visuals as charts and forms to solve many-step word problems. If students need extensive review, have them repeat unit 5 of *Understanding Word Problems*. (S40–S41)

PAGE 23: **Check Yourself**

Students learn a strategy for checking their answers to word problems. They estimate the answer *and* check their math to make sure the answer is correct. If students need extensive review on checking their math, have them repeat unit 3 of *Using a Calculator*. (S42)

PAGE 24: **Math Workout**

Students apply the Math Plan of Action to solve many-step word problems. (S43–S44)

Enrichment Activities

- Play a game in which one student relates a real-life math situation and the other students write what math steps they would use in that situation.
- Put up a visual, such as a menu, on the chalkboard. Have students use the visual to write several many-step word problems.

Unit 5: Some Special Kinds of Problems

In this unit, students solve word problems that involve percents and averages. Some special-needs students will need extensive review on percents, decimals, and percent-to-decimal conversion before they begin this unit. (Unit pre-post test, S47; unit review, S55–S56; S57; S45 with S58)

PAGE 25: **Some Special Kinds of Problems**

Students discuss troublesome real-life situations that require finding percentages and averages.

PAGE 26: **Finding a Reduced Amount**

Students learn the math steps for finding an amount that is reduced by a certain percentage. Encourage students to memorize the math steps. (S48; S49; S51)

PAGE 27: **Finding an Increased Amount**

Students work through the math steps for finding an amount that is increased by a certain percentage. Encourage students to memorize the math steps. (S48; S50; S51)

PAGE 28: **What's the Real Cost?**

Students study the math steps for solving a word problem that involves buying something on time. Encourage students to memorize the math steps. (S48; S52)

PAGE 29: **Finding an Average**

Students learn the math steps for finding an average of several amounts. Encourage students to memorize the math steps. (S53; S54)

PAGE 30: **Math Workout**

Students apply the Math Plan of Action to solve the kinds of word problems they studied in this unit. (S55–S56)

Enrichment Activities

- Have students figure out some real-life averages, such as the average age in their math class and the average number of students in all the math classes you teach.
- Have students make up word problems based on math realia that show such things as discounts, loan rates, and interest rates.

PAGE 31: **Math Plans of Action**

This page lists the strategies for solving one-step and many-step word problems.

SOLVING WORD PROBLEMS
Workbook Answer Key

Unit 1: A Math Plan of Action

Page 4 A Math Plan of Action Answers will vary.
Page 5 What's It All About? 1. Answers will vary. 2. (Wording will vary.) How much money is in her account now?
Page 6 Getting Information 1. Answers will vary. 2. the amount of money he makes altogether that day 3. Answers will vary. 4. $32 a day, $20 in tips **Bonus** $52
Page 7 Solving the Problem 1. Answers will vary. 2. the number of miles she drives altogether 3. Answers will vary. 4. 12 miles, 6 miles, 8 miles 5. add 6. 26 miles
Page 8 Math Workout Students write the six strategies. Wording may vary. *Word problem:* 1. Answers will vary. 2. the total cost of everything he buys 3. Answers will vary. 4. $15, $25, $12 5. add 6. $52

Unit 2: Putting Things Together

Page 9 Putting Things Together Answers will vary.
Page 10 Counting Things in all, altogether, total 1. 50 credits and 45 credits 2. 50 pounds and 30 pounds **Bonus** 95 credits; 80 pounds; $29.70 total
Page 11 More Problems 1. 235 points 2. 235 points and 86 points 3. add 235 and 86 **Bonus** $650 in Jan's account; 321 points; 6 feet
Page 12 Putting the Same Thing Together 5 hours; $4; multiply $4 by 5 hours 1. 10 gallons 2. the total miles the car can go on 10 gallons 3. 23 miles 4. 23 miles **Bonus** $20 daily earnings; 230 miles; $7.80 total cost
Page 13 Math Workout 1. $7.20 2. 49 3. 21

Unit 3: Finding Parts of Amounts

Page 14 Finding Parts of Amounts Answers will vary.

Page 15 **What's Left?** 1.b. $87 c. $300 2.a. what part of the bill is left to pay b. $90 c. $125 **Bonus** $213 take-home pay; $35 left on the bill; 15 tickets

Page 16 **What's the Difference?** 1. the number of boxes Scott packs and the number of boxes Jackie packs 2. how many boxes Jackie packs; how many more boxes Scott packs **Bonus** $3,418 more; 4 boxes; 6 hours

Page 17 **How Many Parts?** total: $3.60; each equal part: $1.20 **How Many Things?** total: 42; equal parts: 3; divide 42 by 3 **Bonus** 3 pounds; 5 workdays; 14 kids; $2 cost of each can

Page 18 **Math Workout** 1. 80 2. $13.18 3. $3 4. 120

Unit 4: More Than One Step

Page 19 **More Than One Step** Answers will vary.

Page 20 **What's Missing?** 1. subtract 2. how much Doris pays; how much the tickets cost in all 3. how much the tickets cost in all 4. multiply $5 by 3 tickets *Steps 1 and 2* $15 total cost **Bonus** $5

Page 21 **Changing Facts** because wire costs $.60 a foot *Steps 1 and 2* 3 feet 1. the total amount of spending money Joline gets 2. multiply 3. change 2 weeks to days because you multiply $50 by the number of days 4. multiply **Bonus** $1.80 total cost; $700 spending money

Page 22 **Looking for Facts** *First problem:* $12.50 and $16.30; the amount of tax *Second problem: Step 1* Add the amounts; $40 total *Step 2* Find the tax and add it to the total. **Bonus** $30.67 customer's bill; $42.60 K.C.'s bill

Page 23 **Check Yourself** *Step 1* $90 *Step 2* $390 *Step 3* $130

Page 24 **Math Workout** 1. *Step 1* Find the monthly total; $402 *Step 2* Find the yearly total; $4,824 2. *Step 1* Find the monthly total; $132 *Step 2* Find the weekly total; $33

Unit 5: Some Special Kinds of Problems

Page 25 **Some Special Kinds of Problems** subtract 15% of $87 from $87

Page 26 **Finding a Reduced Amount** *First problem:* Usual cost: $26; estimates will vary. *Step 2* $10.40 *Second problem: Step 1* .12 *Step 2* 60

Page 27 **Finding an Increased Amount** *First problem:* $900; 15%; estimates will vary. *Step 1* .15 *Step 2* $135 amount added *Second problem: Step 1* .30 *Step 2* 504 more students

Page 28 **What's the Real Cost?** *Step 1* .10 *Step 2* $800 *Step 3* $8,640 **Bonus** 1. $1,440 higher 2. 5% interest

Page 29 **Finding an Average** *Step 1* 231% *Step 2* 3 scores *Step 3* 77%

Page 30 **Math Workout** 1. 840 2. $36.80 3. $217.88 4. $956.25

SOLVING WORD PROBLEMS WorkMasters Answer Key

Unit 1: A Math Plan of Action

S7 **Unit 1: A Math Plan of Action** Wording may vary; 70 miles.

S8–S9 **Hard Words** **Bonus** 1. $650 2. 10 3. $350 4. $2 5. $7.11 6. $160

S10 **The Question Is . . .?** **Bonus** 1. $436 2. $210 3. $4.00 4. $500 5. $4 6. 600

S11 **Clues!** 1. subtract 2. add 3. multiply 4. divide 5. divide 6. add **Bonus** 1. $199.95 2. $575 3. $12 4. 2 5. 10 6. $20,000

S12–S13 **The Right Facts!** 1. a 2. b 3. b 4. a **Bonus** 1. $36 2. 4 3. 26 4. $1.80 5. $150.83

S14 **Unit 1: Solving Word Problems** 1. $289 2. $86 3. $240 4. 3 5. 5-1/2

Unit 2: Putting Things Together

S16 **Unit 2: Putting Things Together** 1. $11 2. 600 3. 22 4. 126 5. $31

S17–S18 **Adding Things Together** 1. 8 2. 176 3. $29 4. 244

S19–S20 **Adding More Things Together** 1. 180 2. $.70 3. 55 4. 31 5. 30

S21–S22 **Putting the Same Thing Together** 1. 600 2. 225 3. $3.30 4. $12.06

S23–S24 **Unit 2: Solving Word Problems** 1. $175 2. 240 3. 2,400 4. 258

Unit 3: Finding Parts of Amounts

S25 **Unit 3: Finding Parts of Amounts** 1. $2.11 2. 13 3. $1.30 4. $275 5. 56

S26–S27 **Finding What Remains** 1. 42 2. $90 3. $800.78 4. $1.52 5. $3,402 6. 55,192

S28–S29 **Finding the Difference** 1. 15 minutes 2. $2,983 3. $40 4. 600 5. 23

S30–S31 **Finding Parts** 1. $10.50 2. $894 3. $12,000 4. 4

S32 **Unit 3: Solving Word Problems** 1. 20 2. $8.80 3. $16 4. $356

S33 **Word Problems Review** 1. 434 2. $2 3. 205 4. 180 5. 58

Unit 4: More Than One Step

S34 **Unit 4: More Than One Step** 1. $2.16 2. 2 3. $200

S35–S36 **The First Step** 1. *Step 1* $4.47 *Step 2* $16.37 2. *Step 1* $2,325 *Step 2* $825 3. *Step 1* 920 *Step 2* 480 4. *Step 1* 33 *Step 2* 58

S37 **More Many-Step Word Problems** 1. $403.43 2. 46 3. $391.83 4. $17,280

S38 **Practice Estimating** Estimates will vary. **Bonus** 1.a. 70 b. 75 c. $209 2.a. 144 b. $160 c. 1,619 3.a. 67 b. 64 c. $19 4.a. 53 b. 314 c. $476 5.a. 308 b. 165 c. $222 6.a. 1,980 b. 2,259 c. $546 7.a. 5.13 b. 26.33 c. $60.13 8.a. 10.42 b. 9.06 c. $68.97

S39 Changing Facts **1.** *Step 1* 120 yards *Step 2* $204 **2.** *Step 1* 3 pounds and 2 pounds *Step 2* 5 pounds **3.** *Step 1* 20 quarts *Step 2* 10 cartons

S40–S41 Looking for Facts **1.** *Step 1* Find the total cost; $5.90 *Step 2* Find the amount of the tip; $.59 **2.** *Step 1* Find the cost of the food; $4.00 *Step 2* Find the amount for tax; $.25 **3.** *Step 1* Find the a la carte price; $3.05 *Step 2* Find the difference; $.75 **4.** *Step 1* Find the total cost; $8.85 *Step 2* Find how much each one pays; one person pays $4.42, the other person pays $4.43.

S42 Are the Answers Right? **1.** *Step 1* $8.75 *Step 2* $1.25 **2.** *Step 2* 20 **3.** *Step 1* $17.04 *Step 2* $7.04 **4.** *Step 1* 9 *Step 2* $40.50

S43–S44 Unit 4: Solving Word Problems **1.** *Step 1* Find the total deductions; $110.78 *Step 2* Find the net pay; $767.88 **2.** *Step 1* Find the total child support; $375 *Step 2* Find the total income; $1,243.15 **3.** *Step 1* Change the fact; 32 ounces *Step 2* Find the number of 8-ounce units in that fact; 4 *Step 3* Find the total cost; $4.80 **4.** *Step 1* Find the total work hours; 9 *Step 2* Find the total number of rooms; 36 *Step 3* Find the number of rooms per hour; 4

Unit 5: Some Special Kinds of Problems

S47 Unit 5: Some Special Kinds of Problems **1.** $181.50 **2.** $777.50 **3.** $3,520 **4.** 28.4

S48 Finding Percents **1.** .10; 8.9 **2.** .25; 87.5 **3.** .185; $20.35 **4.** .06; 11.04 **5.** .0125; .63 **6.** .15; $6.45

S49 What's the Lower Amount? **1.** *Step 1* .40 *Step 2* $21.20 *Step 3* $31.80 **2.** *Step 1* .20 *Step 2* 60 *Step 3* 140 **3.** *Step 1* .25 *Step 2* $22.42 *Step 3* $67.26 **4.** *Step 1* .30 *Step 2* 24 *Step 3* 56

S50 What's the Higher Amount? **1.** *Step 1* .075 *Step 2* $18.75 *Step 3* $268.75 **2.** *Step 1* .30 *Step 2* 360 *Step 3* 1,560 **3.** *Step 1* .18 *Step 2* $122.18 *Step 3* $800.93 **4.** *Step 1* .30 *Step 2* 33 *Step 3* 143

S51 More or Less **1.** *Step 2* $17.50 *Step 3* $52.50 sale price **2.** *Step 2* 45 *Step 3* 345 total workers

S52 Buying on Time **1.** *Step 1* .15 *Step 2* $180 *Step 3* $1,239.12 *Step 4* $1,419.12 **2.** *Step 1* .10 *Step 2* $15 *Step 3* $156 *Step 4* $171 **Bonus** **1.** $219.12 higher; $21 higher **2.** 7%; 16%

S53 Finding Averages: More Than One Step **1.** *Step 1* Find the total of the amounts; 126 *Step 2* Find the number of amounts; 4 *Step 3* Find the average; 31.5 **2.** *Step 1* Find the total hours worked; 32 *Step 2* Find the number of days; 5 *Step 3* Find the average; 6.4

S54 Finding Averages: One Step Only **1.** 12 **2.** 128 **3.** 400

S55–S56 Unit 5: Solving Word Problems **1.** *Step 1* Find the total of the amounts; $4.20 *Step 2* Find the number of times he paid; 5 *Step 3* Divide the total by the number of times; $.84 **2.** *Step 1* .20 *Step 2* Find the amount that's added; 2 *Step 3* Find the increased amount; 12 **3.** *Step 1* .40 *Step 2* Find the amount taken off; $90 *Step 3* Find the reduced amount; $135 **4.** *Step 1* .15 *Step 2* Find the down payment; $131.25 *Step 3* Find the total of all monthly payments; $885.12 *Step 4* Find the real cost; $1,016.37

Subject: _____ Name: _____

Period: _____ Date: _____

Unit 1: A Math Plan of Action

Write six strategies that you'd use to solve word problems.

☐ 1. _____

_____

☐ 2. _____

_____

☐ 3. _____

_____

☐ 4. _____

_____

☐ 5. _____

_____

☐ 6. _____

_____

Now read this word problem. Follow the strategies you listed above. Put an **X** in front of each strategy as you complete it. Show your math work in the boxes below.

> Lupe keeps a record of the number of miles she drives. On Monday, she drives 27 miles. On Tuesday, she drives 8 miles. On Wednesday, she drives 35 miles. How many miles does Lupe drive altogether?

Math Problem	*Answer Check*

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Hard Words

Read these math problems. The words in the labels are often used in word problems. Put an **X** above the words that you don't know. Find out the meanings of those words. Then write a word problem about each math problem. Use the words in the labels. (The first is started as an example of what to do.)

1.
$$\begin{array}{rl} \$900 & \text{monthly pay} \\ -\ 250 & \text{deductions} \\ \hline & \text{remains} \end{array}$$

monthly - every month

deductions -

remains -

Word problem: Joe's monthly pay is

2.
$$\begin{array}{rl} 8 & \text{kilometers} \\ +\ 2 & \text{increased by} \\ \hline & \text{total} \end{array}$$

Word problem: _____

3.
$$\begin{array}{rl} \$500 & \text{old balance} \\ -\ 150 & \text{withdrawal} \\ \hline & \text{remains} \end{array}$$

Word problem: _____

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Name: _____

Hard Words

4. ------- per gallon
   10 ⌈$2 0 total
   gallons

5. $2 0.0 0 amount you pay
   − 1 2.8 9 charge
   ---------- change

6. 3 2 hours each week
   × $5 hourly pay
   ------- altogether

Word problem: _____

Word problem: _____

Word problem: _____

Bonus: Find the answers to the problems.

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The Question Is . . . ?

These word problems are about the math problems next to them. Finish each word problem by writing a question. In the question, use a clue word from the math problem. The first is done as an example.

1. **Gabriel has $86 in his checking account. He deposits $350.**

   What is the new balance of his checking account?

```
   $ 8 6   old balance
 + 3 5 0   deposit
 ---------
           new balance
```

2. **Jesse registers people to vote. Last week, he registered 89 people. This week, he registered 121 people.**

_____

_____

```
    8 9    last week
+ 1 2 1    this week
 ---------
           altogether
```

3. **Sheila buys a skirt on sale. The sale price is $18.50. The regular price was $22.50.**

_____

_____

```
  $2 2.5 0   regular price
- 1 8.5 0   sale price
 ------------
            difference
```

4. **The Tongs pay car insurance 2 times a year. They pay $250 each time.**

_____

_____

```
  $2 5 0   each time
×      2   times a year
 ----------
           yearly
```

5. **Les earns $100 weekly. He works 25 hours a week.**

_____

_____

```
           ---------  an hour
25 ⟌$1 0 0  a week
hours
```

6. **In 1965, the student population at Cassius Clay Middle School was 1,200. Today, the population has increased by 50%.**

_____

_____

```
  1,2 0 0   students in 1965
×     .5 0   increase
 ------------
            more students
```

Bonus: **Find the answers to the problems.**

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Period: _____ Date: _____

Clues!

Read these word problems. Circle the facts you'd use to solve the problems. Put a ✔ above clue words that help you decide which math operation to do. Then write which math operation you'd do to solve each problem. (One is done as an example for you to follow.)

1. The regular price for a set of Max tires is (\$249.95.) The store decreases the price by (\$50.) How much does a set of tires now cost?

   Math operation:

   Subtract #50 from #249.95.

2. Pat gets a bank loan for \$500. The finance charge on the loan is \$75. What is the total amount that Pat will pay back?

   Math operation:

   _____

3. Mr. Kahn buys roses for his wife. He buys 2 dozen roses. Each dozen costs \$6. How much does he pay altogether?

   Math operation:

   _____

4. Nadine gives a baby shower for her sister. She invites 10 people. She makes a pot of spaghetti. She makes enough for 20 servings. How many servings can each person have?

   Math operation:

   _____

5. Jerry works 3 days a week. He works an equal number of hours each day. His weekly total is 30 hours. How many hours does he work per day?

   Math operation:

   _____

6. Church members raise \$12,000 to build a new gym for the church school. They need an additional \$8,000 to pay for all the costs. What is the total amount that the church members need?

   Math operation:

   _____

Bonus: On another sheet of paper write the math problems for the word problems. Then find the answers. Check your answers.

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Period: _____ Date: _____

The Right Facts!

Read each word problem. Underline the question in the problem. Put a ✔ above clue words. Circle the right facts. Then choose the math problem that would solve the word problem. Put an **X** in front of that math problem. (One is started as an example.)

1. Steve is planning meals for a 4 day camping trip. He will have (12 meals) altogether. He wants to spend ($3 per meal.) What is the total amount that Steve will spend for all the meals?

X a.
$$\begin{array}{r} \$\ 3 \\ \times\ 12 \\ \hline \end{array}$$
--------- total amount

b.
$$\begin{array}{r} \$3 \\ \times\ 4 \\ \hline \end{array}$$
------- total amount

What does each number stand for in the problem you chose?

$3 stands for the amount Steve wants to spend on each meal.

____ stands for _____

2. Frisca works in a greenhouse. She works 8 hours each day, 6 days per week. In the morning she works 4 hours before taking a lunch break. How many hours does she work in the afternoon?

a.
$$\begin{array}{r} 8 \\ -\ 6 \\ \hline \end{array}$$
------ hours after lunch

b.
$$\begin{array}{r} 8 \\ -\ 4 \\ \hline \end{array}$$
------ hours after lunch

What does each number stand for in the problem you chose?

____ stands for _____

____ stands for _____

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Name: _____

The Right Facts!

3. **The James Company employs 33 workers. 8 are part-time workers. Then 7 workers resign from their jobs. How many workers now remain?**

a. $\begin{array}{r} 33 \\ -\ 8 \\ \hline \end{array}$

_____ workers remain

b. $\begin{array}{r} 33 \\ -\ 7 \\ \hline \end{array}$

_____ workers remain

What does each number stand for in the problem you chose?

_____ stands for _____

_____ stands for _____

4. **Amy will make an apple pie. That pie will be enough for 8 servings. She buys 4 pounds of apples for the pie. Apples cost $.45 a pound. How much does Amy spend altogether?**

a. $\begin{array}{r} \$.45 \\ \times\ \ 4 \\ \hline \end{array}$

_____ altogether

b. $\begin{array}{r} \$.45 \\ \times\ \ 8 \\ \hline \end{array}$

_____ altogether

What does each number stand for in the problem you chose?

_____ stands for _____

_____ stands for _____

Bonus: Find answers to the right math problems.

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Period: _____ Date: _____

Unit 1: Solving Word Problems

Follow the Math Plan of Action and solve these word problems.

Math Problem *Answer Check*

1. Marta buys some stereo parts. She buys a turn table for $150. And she buys speakers for $139. How much does she pay in all?

2. The Lau family is getting cable TV. They pay $45 for the hook-up, $25 for the channel box, and $16 for the first month of service. What is their total cost?

3. John works at a gas station. He earns $6 per hour. He works 40 hours per week. How much does John earn in one week?

4. Julie's car goes 30 miles on one gallon of gas. She drives 90 miles. How many gallons of gas does she use?

5. A recipe calls for $2\frac{3}{4}$ cups of flour. How much flour is needed if you double the recipe?

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A Math Plan of Action for One-Step Word Problems

Put an **X** in front of each strategy as you complete it.

- ☐ 1. Read the word problem two times. Mark the words you don't know. Find out what they mean.
- ☐ 2. Underline the sentence (the question) that tells you what answer to find.
- ☐ 3. Put a ✔ above clue words.
- ☐ 4. Circle the right facts.
- ☐ 5. Choose the math operation and write the math problem.
- ☐ 6. Estimate the answer. Do the problem. Check your answer.

_____

_____

_____

_____

_____

Words and meanings:

_____

_____

_____

Problem: _____
(What answer must you find?)

Clue words: _____

Facts: _____

Estimate of the answer: _____

Show the math: *Math Problem* *Answer Check*

Note to the teacher: For individualized work, student can copy an assigned word problem, then use this form to analyze and solve it.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 2: Putting Things Together

To solve these one-step word problems, you either add or multiply. Follow the Math Plan of Action and solve them. Show all your work at right.

Math Problem *Answer Check*

1. Sam buys 2 tickets to the high school dance. Each ticket costs $5.50. He buys a corsage for his date. It costs $9.00. How much does Sam pay for the dance tickets?

2. Mandy travels 5 days a week on her job. She travels an average of 120 miles a day. What is the total number of miles she travels in one week?

3. Mark is 14 years old. Jean is 8 years older than he is. Trina is 3 years younger than Mark. How old is Jean?

4. The Lago family picks tomatoes. Mr. Lago can pick 28 bushels in one day. Mrs. Lago can pick 31 bushels. And their 2 sons together can pick 67 bushels. How many bushels can the Lago family pick altogether in one day?

5. Rita must buy a gown and cap for her graduation. She pays $20 for her gown, and $11 for her cap. How much does Rita pay altogether?

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Adding Things Together

Many addition word problems are like these kinds of word problems. Answer the questions under each problem. Then solve them in the space below. Be sure to follow the Math Plan of Action.

1. **Joan rides her horse twice a week. She rides her horse 3 hours on Wednesday. And she rides it 5 hours on Saturday. What is the total number of hours that Joan rides per week?**

   a. What clues tell you to add?

   _____

   _____

   _____

   b. What facts would you add?

   _____

   _____

   _____

Math Problem *Answer Check*

2. Many workers at the Gee Factory go on strike. 58 workers in shift 1 go on strike. 39 workers in shift 2 go on strike. And 79 workers in shift 3 go on strike. How many workers go on strike in all?

   a. What clues tell you to add?

   _____

   _____

   _____

   b. What facts would you add?

   _____

   _____

   _____

Math Problem *Answer Check*

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Name: _____

Adding Things Together

3. Kai is a waitress. She's had her job for two days. She earns $4.50 per hour. On her first day at work, she got $12 in tips. On her second day, she got $17 in tips. How much in tips did she make altogether?

   a. What clues tell you to add?

   _____

   _____

   _____

   b. What facts would you add?

   _____

   _____

   _____

Math Problem *Answer Check*

4. The manager at the Happy Chicken Cafe figures how many pounds of chicken were cooked during the day. By 11 a.m., the workers fried 134 pounds of chicken. They baked 10 dozen biscuits. By 3 p.m., the workers fried 110 pounds of chicken, and baked 6 dozen biscuits. How many pounds of chicken were fried during the day?

   a. What clues tell you to add?

   _____

   _____

   _____

   b. What facts would you add?

   _____

   _____

   _____

Math Problem *Answer Check*

Bonus: Write some word problems that are solved by adding. Give your word problems to a classmate to solve.

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Period: _____ Date: _____

Adding More Things Together

Read these word problems. Put a ✔ above the clue words that tell you to add. Answer the questions under each problem. Then solve the problems in the space at right. Be sure to follow the Math Plan of Action.

1. 115 people visit the Med Clinic on Monday. 90 people visit the clinic on Tuesday. 65 more people than those on Monday visit the clinic on Friday. How many people visit the clinic on Friday?

   a. What clue word tells you what to add?

   _____

   b. What facts would you add?

   _____

   _____

2. Train fare is $.25 more than bus fare. Bus fare used to be $.50. It was increased by $.20. How much is the bus fare now?

   a. What clue word tells you what to add?

   _____

   b. What facts would you add?

   _____

   _____

3. Ty works 40 hours a week. He earns $160 per week. This week he works an extra 15 hours. How many hours does he work in all?

   a. What clue word tells you what to add?

   _____

   b. What facts would you add?

   _____

   _____

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Solving typical addition word problems/***SOLVING WORD PROBLEMS***, Unit 2, p. 11.

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Name: _____

Adding More Things Together

4. 22 people get on a train at Selma. The train then travels 43 miles to Livermore. An additional 9 people get on the train. The train next travels another 20 miles to Metro City. Find the total number of people who travel to Metro City.

   a. What clue word tells you what to add?

   _____

   b. What facts would you add?

   _____

   _____

5. The Kilkare Kids Club holds a trash clean-up in their neighborhood. On Saturday 10 people go out. They pick up 18 bags of trash. On Sunday, 7 people go out and pick up 12 bags more. How many bags of trash do the kids pick up in all?

   a. What clue word tells you what to add?

   _____

   b. What facts would you add?

   _____

   _____

Bonus: Choose one of these word problems. Write it again with different numbers in it. Then solve that problem.

_____

_____

_____

_____

_____

_____

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Putting the Same Thing Together

To solve these word problems, you'd multiply an amount several times. Which amount would you multiply? Read the word problems. Then finish the sentences under the problem. (The first is started as an example.) Be sure to follow the Math Plan of Action.

1. Herb Theatre has 40 rows of seats. There are 15 seats per row. How many people can Herb Theatre seat in all?

   a. Multiply the amount: 15 because there are the same number of seats in each row.

   b. Multiply it 40 times because there are 40 rows.

   Math Problem *Answer Check*

2. Tam is counting boxes of computer paper. He counts 9 boxes. Each box has 25 packages of paper. How many packages of paper are there altogether?

   a. Multiply the amount: _____ because _____

   b. Multiply it _____ times because _____

   Math Problem *Answer Check*

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Name: _____

Putting the Same Thing Together

3. Alan is buying food for the chili he will make. He buys 3 pounds of ground meat at $1.10 a pound. How much does he pay for the ground meat?

   a. Multiply the amount: _____ because _____

   _____

   b. Multiply it _____ times because _____

   Math Problem *Answer Check*

4. Dennis drives his car 270 miles before he fills it up with gas. He buys 9 gallons of gas. He pays $1.34 per gallon. He figures that he averages 30 miles per gallon. What is the total amount that Dennis pays for gas?

   a. Multiply the amount: _____ because _____

   _____

   b. Multiply it _____ times because _____

   Math Problem *Answer Check*

Bonus: Write multiplication word problems. Use these clue words: *at*, *each*, *for*, and *per*.

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Unit 2: Solving Word Problems

Follow the Math Plan of Action and solve these word problems. Then answer the questions.

1. Mundo compares prices for body-building weights. The Sports Pal sells them for $110. SFI Store sells the same weights for $65 more. And the Gym Store sells them for $150. How much are the weights at SFI Store?

Math Problem *Answer Check*

a. Which operation did you choose? _____

b. Why? _____

_____

2. Mrs. Chiniski orders 20 sets of science workbooks. There are 12 workbooks per set. 3 teachers will share the books. Each teacher has about 90 students altogether. How many workbooks does Mrs. Chiniski order altogether?

Math Problem *Answer Check*

a. Which operation did you choose? _____

b. Why? _____

_____

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Name: _____

Unit 2: Solving Word Problems

3. Zeon visited his mother 3 times last year. He traveled 800 miles each time by plane. In April, his airfare was $125. In August, his airfare was $160; and in November, it was $185. How many miles altogether did Zeon travel last year?

Math Problem *Answer Check*

a. Which operation did you choose? _____

b. Why? _____

_____

4. Mountain County will build low-cost homes. The homes will go on sale for $30,000. The county plans to build 50 homes in Montemar, 42 homes in Alba, 48 homes in Del Rey, and 118 homes in Groveland. Find the total number of homes that the county will build.

Math Problem *Answer Check*

a. Which operation did you choose? _____

b. Why? _____

_____

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Subject: _____ Name: _____

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Unit 3: Finding Parts of Amounts

Follow the Math Plan of Action and solve these word problems. Show your work.

Math Problem *Answer Check*

1. **A sales clerk rings up a customer's bill for $32.89. The customer gives him $35.00. How much change does the clerk give the customer?**

2. **Scott must sort 25 bags of mail. He sorts 12 bags by lunchtime. How many bags remain for him to sort?**

3. **Lori fills her car with 12 gallons of gas. She pays $15.60 for the gas. How much does she pay for one gallon of gas?**

4. **Dave, Ed, and Bob are roommates. Their total rent is $825. They share the amount of the rent equally. How much rent does Ed pay?**

5. **Pablo has lived in the United States since 1928. In 1984, he became a U.S. citizen. How many years did Pablo live in the U.S. before becoming a citizen?**

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Finding What Remains

Many subtraction word problems are like these word problems. Underline the sentence (the question) that tells what answer to find. Circle the facts. Put a ✔ above clue words. Then solve the problems.

1. Kathy must deliver phone books to 110 homes. By noon, she delivers books to 68 homes. How many homes does she have left to deliver books to?

   a. What amount do you take away?

   _____

   b. What amount do you take it away from?

   _____

2. Danny's net pay is $850 every month. He figures that $760 of that amount goes for rent, bills, food, and bus fare. How much money remains for Danny to spend on other things?

   a. What amount do you take away?

   _____

   b. What amount do you take it away from?

   _____

3. The Wongs paid $400.00 of their hospital bill. The grand total of the bill is $1,200.78. Find the amount that still remains to be paid.

   a. What amount do you take away?

   _____

   b. What amount do you take it away from?

   _____

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Name: _____

Finding What Remains

4. Cal is paying for a concert ticket. The price of the ticket, plus sales tax, is $8.48. He gives the sales clerk $10.00. How much change does Cal get back?

   a. What amount do you take away?

   _____

   b. What amount do you take it away from?

   _____

5. Sandy pays for her car on time. The total amount of the financing is $5,832.00. The monthly payment is $121.50. So far, Sandy has paid $2,430.00. How much remains on her financing?

   a. What amount do you take away?

   _____

   b. What amount do you take it away from?

   _____

6. Lisa uses her car for work. This past year, she drove a total of 68,000 miles in her car. She drove the most miles in March—15,350 miles. 12,808 miles of the total amount were used for non-work. What is the total number of miles that Lisa used her car for work?

   a. What amount do you take away?

   _____

   b. What amount do you take it away from?

   _____

Bonus: Write subtraction word problems like these.

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Finding the Difference

These word problems compare amounts. But they are missing a question. Write *two* questions that could finish each problem. Use *more* in one question. Use *less* in the other. (The first is done as an example.) Then solve the problem.

1. Sherry drives to work. It takes her 35 minutes. Ann uses the bus. It takes her 50 minutes to get to work.

   a. How many more minutes does it take Ann to get to work?

   b. How many less minutes does it take Sherry to get to work?

   Math Problem *Answer Check*

2. This year, Mr. and Mrs. Campo will pay $3,875 in taxes. Last year, they paid $892 in taxes.

   a. _____

   b. _____

   Math Problem *Answer Check*

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Name: _____

Finding the Difference

3. Before a sale, a television cost $129. It was then reduced to $89.

   a. _____

   b. _____

   Math Problem *Answer Check*

4. San Lucas School builds a new gym. The old gym seated 900 people. The new gym seats 1,500 people.

   a. _____

   b. _____

   Math Problem *Answer Check*

5. Kato and Eugene both ran for student body president. Kato received 312 votes. Eugene received 289 votes.

   a. _____

   b. _____

   Math Problem *Answer Check*

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Finding Parts

These division word problems are not finished. Circle the facts in each problem. Write a question for it. Then solve the problem. (The first is started as an example.)

1. Mae and Dennis Lee gave a party for their wedding. It was held at the Sing Yoon Restaurant. (71 people) were at the party. The bill was ($745.50.)

How much did the Lees pay for each person?

Math Problem *Answer Check*

71 | $745.50

2. Irma works as a computer clerk. Her annual salary is $10,728. She works 12 months a year.

How

Math Problem *Answer Check*

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Name: _____

Finding Parts

3. A state holds its first lottery. The prize is $72,000. The state will divide the money equally between 6 winners.

How _____

Math Problem *Answer Check*

4. A 24 hour grocery store has work shifts that are 6 hours long. 3 persons work on each shift.

How _____

Math Problem *Answer Check*

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 3: Solving Word Problems

Circle the facts in each word problem. Underline the question. Tell how you'd solve the problem. Then show the math for it.

Math Problem *Answer Check*

1. Bob scored 560 points for the whole basketball season. He averaged 28 points per game. How many games did Bob play?

   How would you solve the problem?

   _____

   _____

2. Zeb buys an 8 pound roast for dinner. It costs $11.20. He pays with $20. How much does he get back in change?

   How would you solve the problem?

   _____

   _____

3. The Car Club collects dues each month. Dues are $2 per person. Last month, the club collected $82. This month it collected $98. How much more money did the club collect this month?

   How would you solve the problem?

   _____

   _____

4. Travis School buys 5 personal computers. The total cost is $12,816. It will pay for the computers in 36 equal payments. How much is each payment?

   How would you solve the problem?

   _____

   _____

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Subject: _____ Name: _____

Period: _____ Date: _____

Word Problems Review

Follow the Math Plan of Action and solve these word problems. You'd add, subtract, multiply, or divide to find the answers.

1. In the 1964 Presidential election, President Johnson received 486 electoral votes. Senator Goldwater received 52 electoral votes. Find the difference in the electoral votes for both candidates.

2. Elizabeth gives a party for 22 people. She spends $44 for pizza. She also spends $48 for sodas, cake, and ice cream. How much does Elizabeth spend per person for pizza?

3. An average baked potato contains 90 calories. A small package of potato chips contains 115 more calories. How many calories are in a package of potato chips?

4. Moe runs in the 10 kilometer races. In the last 6 months, he ran 18 races. How many kilometers did Moe run in all?

5. Rikki takes a typing test. She types 174 words in 3 minutes. How many words does she type per minute?

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Note to the teacher: For individualized work, assign a specific problem to a student and have that student fill in the Math Plan of Action sheet on page S15.

Unit review/***SOLVING WORD PROBLEMS***, Units 1–3, pp. 4–18.

Subject: _____ Name: _____

Period: _____ Date: _____

Unit 4: More Than One Step

Follow the Math Plan of Action and solve these word problems. Show all your work on this page.

1. Nick calls his grandmother long distance. They talk for 15 minutes. The first 3 minutes cost $1.20. Each additional minute costs $.08. How much does the call cost altogether?

2. Len is building a table. He needs 4 pieces of wood. Each piece must be 18 inches long. He will cut the pieces from boards that are 3 feet long. How many 18 inch pieces can he cut from one 3 foot board?

3. Mario has two part-time jobs. He earns $4 an hour as a file clerk. He earns $5 an hour as a typist. How much does he earn altogether in one week?

Mario's Total Work Hours

Job	Mon.	Tues.	Wed.	Thurs.	Fri.
File clerk	3	4	6	3	4
Typist	5	4	4	7	4

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Subject: _____ Name: _____

Period: _____ Date: _____

The First Step

To solve these word problems, you must do more than one math step. Write what math step you must do first. Then solve the problem. Be sure to follow the Math Plan of Action.

1. Tony buys ingredients for a special seafood stew. He buys 3 pounds of clams at $1.49 per pound. He buys $4.50 worth of shrimp. He also buys a crab that costs $7.40. How much does Tony spend in all?

   a. What amount must you first find?

   _____

   b. How would you find it?

   _____

   _____

Step 1 Estimate: _____
Math Problem *Answer Check*

Step 2 Estimate: _____
Math Problem *Answer Check*

2. The students at Logan School raised money by giving a talent show. They hoped to raise $1,500. But they raised more than that. They sold $1,890 in adult tickets. And they sold $435 in children's tickets. How much more money did they raise?

   a. What amount must you first find?

   _____

   b. How would you find it?

   _____

   _____

Step 1 Estimate: _____
Math Problem *Answer Check*

Step 2 Estimate: _____
Math Problem *Answer Check*

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Name: _____

The First Step

3. Joseph can only have 1,400 calories a day. Today, he had 350 calories at breakfast and 110 calories at his morning snack. He had 420 calories at lunch and 40 calories at his afternoon snack. How many calories does Joseph have left for dinner and his evening snack.

   a. What amount must you first find?

   _____

   b. How would you find it?

   _____

   _____

Step 1 Estimate: _____
Math Problem *Answer Check*

Step 2 Estimate: _____
Math Problem *Answer Check*

4. Carol and Ann share a computer terminal. Last week, Carol worked on the terminal for 25 hours. Ann worked on the terminal 8 hours more than Carol. How many hours did they work altogether on the terminal last week?

   a. What amount must you find first?

   _____

   b. How would you find it?

   _____

   _____

Step 1 Estimate: _____
Math Problem *Answer Check*

Step 2 Estimate: _____
Math Problem *Answer Check*

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Subject: _____ Name: _____

Period: _____ Date: _____

More Many-Step Problems

Follow the Math Plan of Action and solve these word problems.

1. Mrs. Moreno has a balance of $89.32 in her checking account. She deposits $878.00 more in it. She writes checks that total $563.89. What is the new balance?

2. Metro City hires 356 teenagers for a special Job Program. 200 teenagers are placed in office jobs. 110 teenagers are placed in jobs in city parks. The rest are placed in hospital and daycare center jobs. How many teenagers are in that group?

3. Rod counts the money in the cash register. He counts $37.83 in change. He counts $154.00 altogether in one, five, and ten-dollar bills. Then he also counts up 10 twenty-dollar bills. How much money is there in all?

4. The Red Taxicab Company has 3 work shifts. Each shift has 18 drivers. Each driver takes in about $320 in fares per day. Find the total fares that the drivers take in daily.

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Subject: _____ Name: _____

Period: _____ Date: _____

Practice Estimating

The more you estimate, the better you get at doing it. Estimate the answers to these problems. Then check your estimates. See how close they are to the actual answers.

1. a. 42 + 28 = _____
   b. 56 + 19 = _____
   c. $124 + $85 = _____

2. a. 49 + 56 + 39 = _____
   b. $12 + $69 + $42 + $37 = _____
   c. 377 + 438 + 804 = _____

3. a. 81 − 14 = _____
   b. 89 − 25 = _____
   c. $37 − $18 = _____

4. a. 121 − 68 = _____
   b. 548 − 234 = _____
   c. $699 − $223 = _____

5. a. 7 × 44 = _____
   b. 11 × 15 = _____
   c. $74 × 3 = _____

6. a. 33 × 60 = _____
   b. 9 × 251 = _____
   c. $13 × 42 = _____

7. a. 41 ÷ 8 = _____
   b. 79 ÷ 3 = _____
   c. 481 ÷ $8 = _____

8. a. 125 ÷ 12 = _____
   b. 444 ÷ 49 = _____
   c. $2,483 ÷ 36 = _____

Bonus: Work out the actual answers for yourself. Use a calculator, or pencil and paper. Round your answers to the nearest hundredth.

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Subject: _____ Name: _____

Period: _____ Date: _____

Changing Facts

Read these word problems. Circle the facts that must be changed. Tell how you'd do that. Then solve the problems. Be sure to follow the Math Plan of Action.

1. Mr. Arnold needs 360 feet of wire fencing. The store sells wire fencing for $1.70 a yard. How much will Mr. Arnold pay for the fencing?

Step 1: Change the fact.	Step 2: Solve the problem.

   a. What fact must you change?

   _____

   b. How would you change that fact?

   _____

2. Kim bought 48 ounces of salami last week. She buys 32 ounces this week. How many pounds of salami did she buy in two weeks?

Step 1: Change the fact.	Step 2: Solve the problem.

   a. What fact must you change?

   _____

   b. How would you change that fact?

   _____

3. Lonny works for an ice-cream store. He makes 5 gallons of chocolate ice cream. He will put it into cartons that hold 2 quarts each. How many cartons will he fill?

Step 1: Change the fact.	Step 2: Solve the problem.

   a. What fact must you change?

   _____

   b. How would you change that fact?

   _____

Bonus: Think up some word problems like the ones on this page. They should have facts that first must be changed in order to solve the problems.

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Subject: _____ Name: _____

Period: _____ Date: _____

Looking for Facts

⁂ Canta de Musica Restaurante ⁂

A la Carte

Taco	$1.10
Regular Burrito	$1.25
Super Burrito	$2.30
Enchilada	$ .80
Tamale	$1.00
Add rice, beans, and salad	$1.25

Dinners
(includes rice, beans, salad, soup, and dessert)

Beef Stew	$3.50
Chicken Mole	$4.25
Combination	$3.80

Drinks

Coffee	$ .50
Ice Tea	$ .75
Lemonade	$ .75

Use this menu to solve these two-step word problems. First follow the Math Plan of Action and read the word problem. Then tell about the steps you'd do to solve the problem. Next solve the problem. Show the math for each step.

1. Bette figures out a customer's bill. The customer had a chicken mole dinner, lemonade, and coffee. Bette adds $.40 tax to the cost. The customer tips her 10% of the total. How much is the tip?

Step 1: _____

Step 2: _____

2. Arlene's check comes to $4.25. She had a beef stew dinner and a cup of coffee. How much tax was added to her check?

Step 1: _____

Step 2: _____

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Using facts from other sources/***SOLVING WORD PROBLEMS***, Unit 4, p. 22.

Name: _____

Looking for Facts

3. Chuck wants a tamale and an enchilada. He also wants rice, beans, and salad. He can order them a la carte. Or he can order them in a combination dinner. How much more would the combination dinner cost?

Step 1: _____

Step 2: _____

4. Marc orders a combination dinner and a lemonade. Jeannie orders a super burrito with rice, beans, and salad. She also orders a lemonade. They will split the check evenly. How much will each pay?

Step 1: _____

Step 2: _____

Bonus: Use the menu and make up two-step problems of your own. Give those problems to a classmate to solve.

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Using facts from other sources/***SOLVING WORD PROBLEMS***, Unit 4, p. 22.

Subject: _____ Name: _____

Period: _____ Date: _____

Are the Answers Right?

Check the answers of these two-step math problems. Cross out a wrong answer, and write the correct answer next to it.

1. **Step 1**

$4.00	cream
3.50	shampoo
+ 1.25	toothpaste
$9.68	total amount

Step 2

$10.00	Bob gives cashier
− 9.68	total amount
$ .32	change

2. **Step 1**

30	tests
× 6	groups of students
180	students tested

Step 2

200	students altogether
− 180	students tested
30	students absent

3. **Step 1**

$15.89	charge
+ 1.15	tax
$17.98	total charge on credit account

Step 2

$17.98	total charge
− 10.00	paid on account
$ 7.98	left to pay on account

4. **Step 1**

35	total hours
− 26	hours weekly
19	extra hours

Step 2

$4.50	per hour
× 19	extra hours
40 50	
45 0	
$85.50	extra pay

Bonus: Write word problems about the math problems on this page. Use another sheet of paper.

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 4: Solving Word Problems

Follow the Math Plan of Action and solve these word problems. Write what you'll do in each step.

1. Charlie's monthly gross pay is $878.66. These deductions are taken out of his pay each month: $83.03 for taxes; $15.00 for medical insurance; and $12.75 for his pension plan. What is Charlie's monthly net pay?

Step 1: _____

_____

Estimate: _____

Math Problem *Answer Check*

Step 2: _____

_____

Estimate: _____

Math Problem *Answer Check*

2. Ruth has 3 children, ages 16, 12, and 8. Her take-home pay is $868.15 every month. She also gets $125 per child for child support. How much money does Ruth have per month to support her family?

Step 1: _____

_____

Estimate: _____

Math Problem *Answer Check*

Step 2: _____

_____

Estimate: _____

Math Problem *Answer Check*

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Name: _____

Unit 4: Solving Word Problems

3. Chico buys 2 pounds of cheese at the deli. The cheese costs $1.20 for 8 ounces. How much does Chico pay altogether?

Step 1: _____

_____

Estimate: _____

Math Problem *Answer Check*

Step 2: _____

_____

Estimate: _____

Math Problem *Answer Check*

Step 3: _____

_____

Estimate: _____

Math Problem *Answer Check*

4. Marion is a maid at a hotel. She works 5 hours in the morning, and 4 hours in the afternoon. How many rooms must she clean in one hour? (Use the chart below.)

Worker	Number of rooms to be cleaned		
Loy	22	14	0
Meg	9	8	14
Marion	0	11	25

Step 1: _____

_____

Estimate: _____

Math Problem *Answer Check*

Step 2: _____

_____

Estimate: _____

Math Problem *Answer Check*

Step 3: _____

_____

Estimate: _____

Math Problem *Answer Check*

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Subject: _____ Name: _____

Period: _____ Date: _____

A Math Plan of Action for Many-Step Word Problems

Put an **X** in front of each strategy as you complete it.

- ☐ 1. Read the word problem two times. Mark the words you don't know. Find out what they mean.
- ☐ 2. Draw a line under the sentence (the question) that tells you what answer to find.
- ☐ 3. Put a ✓ above clue words.
- ☐ 4. Circle the right facts.
- ☐ 5. Choose the math operation that will solve the word problem. Decide what facts you need for that operation.
- ☐ 6. Decide what steps you must first do to find missing facts. Write those steps as math problems.
- ☐ 7. Estimate the answers to the first steps. Do the problems. Check your answers.
- ☐ 8. Write the math problem for the last step. Estimate the answer. Do the problem. Check your answer.

Words and meanings:

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Reviewing strategies for solving many-step word problems/
SOLVING WORD PROBLEMS, Unit 4, pp. 19–24, and Unit 5, pp. 25–29.

Name: _____

A Math Plan of Action for Many-Step Word Problems

Clue words: _____

Facts: _____

Show the math:

Step 1:

_____

_____

Estimate: _____

Math Problem *Answer Check*

Step 2:

_____

_____

Estimate: _____

Math Problem *Answer Check*

Step 3 (as needed):

_____

_____

Estimate: _____

Math Problem *Answer Check*

Step 4 (as needed):

_____

_____

Estimate: _____

Math Problem *Answer Check*

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Note to the teacher: For individualized work, the student can copy an assigned word problem on the first page, then use this form to analyze and solve it. Write directions after each step or have student describe what to do.

Reviewing strategies for solving many-step word problems/***SOLVING WORD PROBLEMS***, Unit 4, pp. 19–24.

Subject: _____ Name: _____

Period: _____ Date: _____

Unit 5: Some Special Kinds of Problems

Use the Math Plan of Action to solve these word problems. Show all your work. Round your answers to the nearest hundredth.

1. The Selma City Youth Office is buying a typewriter. The store gives the office a 45% discount. The regular price is $330. How much does the office pay?

2. Tammy buys a bedroom set on time. It costs $658.90. The store charges her 18% interest. How much does Tammy pay altogether?

3. Joe buys a used truck. It costs $3,200. He pays 20% of that amount in cash. He gets a bank loan to pay the rest. He pays back the loan in 24 months at $120 per month. How much does Joe pay in all for his truck?

4. Leo is in a beginning typing class. He takes a speed typing test every day. He types 26 wpm (words per minute) on Monday. He types 27 wpm on Tuesday; 30 wpm on Wednesday; 29 wpm on Thursday; and 30 wpm on Friday. What is the average number of words per minute that Leo types?

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Subject: _____ Name: _____

Period: _____ Date: _____

Finding Percents

Here's how to find the percent of an amount. (For example: 23% of 80.)

- First, change the percent to a decimal.
- Then multiply the amount by the decimal.

23% of 80 = _____

23% ⟶ .23

$$\begin{array}{r} 80 \\ \times\ .23 \\ \hline 240 \\ 160 \\ \hline 18.40 \end{array}$$ answer

---

Now find the percent of these amounts. If you need to, round your answer to the nearest hundredth.

1. **10% of 89 = _____**

   10% ⟶ .10

   $$\begin{array}{r} 89 \\ \times\ .10 \\ \hline 8.90 \text{ answer} \end{array}$$

2. **25% of 350 = _____**

   25% ⟶ ------

3. **18.5% of $110 = _____**

   18.5% ⟶ ------

4. **6% of 184 = _____**

   6% ⟶ ------

5. **1.25% of 50 = _____**

   1.25% ⟶ ------

6. **15% of $42.98 = _____**

   15% ⟶ ------

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Reviewing finding percents/***SOLVING WORD PROBLEMS***, Unit 5, pp. 26–28.

Subject: _____ Name: _____

Period: _____ Date: _____

What's the Lower Amount?

Follow the Math Plan of Action and solve these word problems. (If you need help, look at page 26 of your *Solving Word Problems* workbook.)

1. Red buys a tire on sale. The regular price was $53. It is now 40% off. What is the sale price?

   Step 1 40% ⟶ ------
   Step 2 **Step 3**

2. City police arrested 80 drunk drivers last year. Then the city made tougher laws. The number of drunk drivers arrested this year decreased by 20%. How many drunk drivers were arrested this year?

   Step 1 ------ ⟶ ------
   Step 2 **Step 3**

3. Sal's Emporium holds a store-wide sale. A down jacket is reduced by 25%. It was $89.68. What is the reduced price?

   Step 1 ------ ⟶ ------
   Step 2 **Step 3**

4. The New Yen Company cuts back its staff by 30%. It had 200 workers before the cutback. How many workers does it now have?

   Step 1 ------ ⟶ ------
   Step 2 **Step 3**

Bonus: Find a sale ad that shows regular prices and percent discounts. Figure out the sale prices.

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Practice word problems about percents off/***SOLVING WORD PROBLEMS***, Unit 5, p. 26.

Subject: _____ Name: _____

Period: _____ Date: _____

What's the Higher Amount?

Follow the Math Plan of Action and solve these word problems. (For help, look at page 27 of your *Solving Word Problems* workbook.) If you need to, round answers to the nearest hundredth.

1. Velma has $250 in her savings account. The bank pays Velma 7.5% interest on that money and adds it to her account. What is Velma's new balance?

Step 1 7.5% ⟶ _____
Step 2 **Step 3**

2. A church served 1,200 free dinners to needy people in May. It served 30% more free dinners in June. How many dinners did the church serve in June?

Step 1 _____ ⟶ _____
Step 2 **Step 3**

3. Ned charged a total of $678.75 on his bank charge card. The bank charged him 18% interest for that amount. How much did Ned pay back altogether?

Step 1 _____ ⟶ _____
Step 2 **Step 3**

4. Carlos weighs 110 pounds. He needs to increase his weight by 30%. What weight should he be?

Step 1 _____ ⟶ _____
Step 2 **Step 3**

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Subject: _____ Name: _____

Period: _____ Date: _____

More or Less

Look carefully at the steps in these math problems. Then write a word problem for each math problem. Use the clue words *reduced by* or *increased by*.

1.

Step 1 25% ⟶ .25

Step 2

$70 regular price
× .25 off

-------- amount off

Step 3

$70.00 regular price
− -------- amount off
---------- sale price

2.

Step 1 15% ⟶ .15

Step 2

300 workers last year
× .15 more workers

-------- new workers

Step 3

300 workers last year
+ ---- new workers
-------- total workers

Bonus: Find the answers to these problems.

Understanding word problems about percent increases or decreases/
SOLVING WORD PROBLEMS, Unit 5, pp. 26–27.

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Subject: _____ Name: _____

Period: _____ Date: _____

Buying on Time

Follow the Math Plan of Action and solve these word problems. Find the real cost of the items. (If you need help, look at page 28 of your *Solving Word Problems* workbook.)

1. The Simpsons buy a piano for $1,200. They first pay 15% as a down payment. They pay the rest of the amount in 36 monthly payments. Each payment is $34.42. How much do the Simpsons pay altogether for the piano?

Step 1 ------ ⟶ ------
Step 2

Step 3

Step 4

2. Gilbert buys a coat for his mother. It costs $150. He pays 10% of it. He pays the rest with his store charge card. He'll make monthly payments of $13 for 12 months. How much will he pay for the coat altogether?

Step 1 ------ ⟶ ------
Step 2

Step 3

Step 4

Bonus: See if you can figure these answers for both problems:
1. How much higher than the price is the real cost?
2. What is the rate of interest for buying on time? (Round to the nearest whole percent.)

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Subject: _____ Name: _____

Period: _____ Date: _____

Finding Averages: More Than One Step

Follow the Math Plan of Action and solve these problems.
Round your answers to the nearest hundredth.

1. Ellen keeps a record of how many miles per gallon her car gets on a full tank of gas. In May, she wrote these amounts: 32 mpg (miles per gallon); 31 mpg; 28 mpg; and 35 mpg. How many miles per gallon did her car average in May?

Step 1: _____

_____

Estimate: _____

Math Problem *Answer Check*

Step 2: _____

How many amounts did she record?

_____ amounts.

Step 3: _____

Estimate: _____

Math Problem *Answer Check*

2. Amos works a different number of hours every day. This week he works these hours: Monday, 6 hours; Tuesday, 5 hours; Wednesday, 6 hours; Thursday, 7 hours; Friday, 8 hours. How many hours of work does Amos average per day?

Step 1: _____

_____

Estimate: _____

Math Problem *Answer Check*

Step 2: _____

How many days did he work?

_____ days.

Step 3: _____

Estimate: _____

Math Problem *Answer Check*

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Subject: _____ Name: _____

Period: _____ Date: _____

Finding Averages: One Step Only

Sometimes all the facts you need to find an average are in a word problem. Then you can solve that problem with just one step. Here's an example:

Johnson High football squad has a champion offensive team. The total weight of the 11 players is 2,035 pounds. Find the average weight of the football players.

$$11 \text{ players} \overline{)2,035} \quad \frac{\text{average weight}}{\text{total weight}}$$

Solve these problems. Use the Math Plan of Action.

1. The Baby Garment Factory employs 18 workers. Altogether they can sew 216 baby pj's per hour. They work 40 hours a week. What's the average number of pj's that one worker can sew in an hour?

2. McAuley School is 10 years old. It has 4 grade levels. 1,280 students have graduated from that school. Find the average number of students that graduated from the school each year.

3. The Movie House presents a special showing of a movie. It shows that movie 4 times. Each showing is 2 hours long. 1,600 people see the movie. About 300 people can't get in. What's the average number of people who see each showing?

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Subject: _____ Name: _____

Period: _____ Date: _____

Unit 5: Solving Word Problems

Follow the Math Plan of Action and solve these problems. Write what you'll do in each step.

1. Sam ate lunch every day last week at the senior center. He gave these amounts for lunch: Monday, $1.00; Tuesday, $.75; Wednesday, $.85; Thursday, $1.10; and Friday, $.50. What is the average amount that Sam gave for lunch?

Step 1: _____

_____

Estimate: _____

Math Problem *Answer Check*

Step 2: _____

How many lunches did he have?

_____ lunches.

Step 3: _____

Estimate: _____

Math Problem *Answer Check*

2. Shirley cooks for different people. She started with 10 clients. Her list of clients increased by 20%. How many clients does Shirley cook for now?

Step 1: _____

------ → ------

Step 2: _____

_____

Estimate: _____

Math Problem *Answer Check*

Step 3: _____

_____

Estimate: _____

Math Problem *Answer Check*

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Unit review/***SOLVING WORD PROBLEMS***, Unit 5, pp. 25–30.

Name: _____

Unit 5: Solving Word Problems

3. A hardware store is having a 30%–75% off sale. A gas-powered lawn mower is 40% off. Its regular price was $225. What is its sale price?

Step 1: _____

------ → ------

Step 2: _____

_____

Estimate: _____

Math Problem *Answer Check*

Step 3: _____

_____

Estimate: _____

Math Problem *Answer Check*

4. The Dantes buy furniture. If they pay in cash, they would pay $875. But they do this: pay 15% down, then pay $36.88 a month for 24 months. How much will they pay altogether?

Step 1: _____

------ → ------

Step 2: _____

_____

Estimate: _____

Math Problem *Answer Check*

Step 3: _____

_____

Estimate: _____

Math Problem *Answer Check*

Step 4: _____

_____

Estimate: _____

Math Problem *Answer Check*

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Subject: _____ Name: _____

Period: _____ Date: _____

In Your Own Words

Have you ever seen a word problem that seems hard to understand? Find a word problem like that. Write it below. Then write the word problem in your own words.

The Word Problem:

In Your Own Words:

Bonus: Follow the Math Plan of Action. Solve the word problem.

Note to the teacher: Write a word problem at the top of the page, or have students choose and copy one.

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Name: _____

A Math Plan of Action for Many-Step Word Problems

Clue words: _____

Facts: _____

Show the math:

Step 1: ------ ⟶ ------

Step 2: _____ *Math Problem* *Answer Check*

Estimate: _____

Step 3: _____ *Math Problem* *Answer Check*

Estimate: _____

Step 4 (as needed): _____ *Math Problem* *Answer Check*

_____

Estimate: _____

Note to the teacher: First page of this form is on page S45. For individualized work, the student can copy an assigned word problem, then use this form to analyze and solve it. Write directions after each step or have student describe what to do.

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